②

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 KHD 7,5 a Edition 10.69

En

PE 6 A 90 C 410 LS 2184 + Intermediate version 2178

RQ 250/1300 AB 575 DL* RQV 250-1300 AB 612 DL* EP/RSV ... B 254 DL supersedes 3.67
company K H D
engine F 6 L 312
(135 PS)*
150 PS **

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Ofference cm³/ 100 strokes 4	Control rod travet mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5.9 - 6.4	0,3			
	6 15	2,3 - 3,1 14,2 -15,5	(0,6)			w.
200	9	3,8 - 4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Festoil-ISO 4113

RQ 250/1300 AB 575 DL

Chectur PRG chi		Full-load : Setting po	ont	Test spe	offications (4)	idle spe Setting (_		chcators (5)	Torque o	combrol 3
rëv imen l	Control rod travel mm	revimin		Control and Street man 5	revimus 6	revimo 7	Control red Street mens		Control rod travel mm	reviman 11	Control rod travel mm
550	15,7-16,3	550	16 (c) estate discontinues - east - site categorisms	1300 1320 1350 1410	14,0-14,4 9,8-14,0 0 - 9,5 0	500	0	100 200 300 400	6,2-8,1 4,8-6,8 2,0-4,5 0	900	15,8-16,0 15,1-15,4 14,0-14,3

Torque-control travel on flyweight assembly dimension a =

0,65

Speed regulation At

mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	stivery on ontrol lever op 40°C (104°F)	Control rod stop 39	Fuel dalor	bry characteristics	3	Starting fi little spec	d G
revissor 1	cm ³ /-1000 strokes 2	nev <i>ic</i> en 3	review 4	cm³/-1C30 strokes 5		revinun 6	cm ³ /1000 strokes/mm 7
1380	74,5-76,5**		1000 600	67,5-70,5** 66,5-70,5**			
1280	69,0-71,0*	700	1000 700	63,0-66,0* 64,0-67,0			
		Control of the Contro		ventura managa managa paraga managa paraga p			

Checking values in brackets

BOSCH

Gescheftsbereich KH. Kundendienst. Kfz. Ausrustung. 1980 bir Robert Bosch Gmohl. Postfach 50. D. 7000 Stuttgart 1. Printeg in the Federal Republic of Gerinary. Imprime en Republicular Federal & Allemanne par Robert Bosch Gmohl.

B. Governor Settings

1 Uppe	rated speed	rev/min	Intermed	hate rated	speed	(•)	Lower	rated speed	11 5 1	rque control
Degree of deflection of control lever 1	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
EP/RSV ca.61	300-12! 1250 1300	50 A8 B254 16,0 11,4	DL **			ca.22	300 100 300	6,0 19 - 21 5,7-6,3	1230 1000	0 0,4-0,6
(2a)	1400 1550	5,7 7,0-10,4 2.0- 3.8 0 - 1 50 A4 B254D	***				500 680	1,4-3,7	400	0,4-0,6
ca.73	1150 1200 1220 1200 1250 1340	16,0	'* W S ***	ithout pring ith au pring			300 100 300 400 570	6,0 19 - 21 5,7-6,3 2,9-4,4 0 - 1	1130 900 400	0 0,5-0,7 0,7-0.9

B. Governor Settings

Testoil-ISO 4113

RQV 250-1300 AB 612 D

1) Uppe	r rated speed	rev/min	Intermediate rated speed			Lower rated speed			(3) Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm 9	rev/min	Control red travel mm
ca.66	1300	15,0-18,3		-	-	ca.10	100	6,5-8,0	1300	0
	1350 14J0	10,0-14,8 4,6-10,8					250	5,1-7,3	1100	0,4-0,6
	1450 1530	0 - 6,7					400 600	3,0-4,3 1,6-3,1	900	0,7-0,9
29	.550	· ·					840	0	550	1,1-1,3

Torque-control travel dimension a = 1,2 mm C. Settings for Fuel Injection Pump with Fitted Governor

	# load stop	6 Rotational- speed limitat	⊕ fe	el delivery eracteristics	Starting f	uel delivery 5	4 idle stop	
	cm-V1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7		Control rod travel mm 9
1300	69,0 - 71,0	1320	1000 700					

Checking values in brackets En

* 1 mm less control rod travel than col. 2

VDT-WPP 001/4 KHD 2,6a 2. Edition

PES 3 A 75 C 410/3 RS 1183

RS 1194

PES 3 A 75 C 410/3 RS 1185 RS 1117

.. D..

EP/RSV 325-1400 A8B471DL 325-1400 A8B252DL

325-1150 A8B474DL*

325-1150 A8B260DL*

1.68 KHD company

F 3 L 812 D (50 PS)

(43,5 PS)*

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

See page 4!

Rotational speed	Control red travel	Fuel delivery	cm³/	travel	Fuel delivery "D" cm\$100 strokes	Spring pre tensioning (torque-control valve)
rev/min	mm 2	cm3/100 strokes 3	100 strokes 4	mm 2	3	6
1000	12	6,2 - 6,6	0,3	12	5,2 - 5,6	
	9 15	3,0 - 3,7 8,5 - 9,5		9 -	2,7 - 3,5	
200	9	1,9 - 2,8		9	0,7 - 1,4	

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed Control rod travel mm	Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm
29		See	page	2!					

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-load stop	6 Rotational- speed limitat 3a Fuel delivery characteristics			Starting f	uel delivery 5	Idle stop		
Test oil te rev/min 1	cm ³ /1000 strokes 2	Note. changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm [®] 1000 strokes 7		Control rod travel mm 9	
1380	50,5 - 52,5 (50,0 - 53,0)	1410	785	44,5 - 47,5 (44,0 - 48,0)			325 (471	5,5 DL)	
1130	45,5 - 47,5	1160	800	44,0 - 47,0			325 (474	5,5 DL)	
								./.	

Checking values in brackets

* 1 mm less control rod travel than col 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

			T			F 3 L 81			HD 2,6	<u>a</u>
oper rated segree of effection		Control rod travel	Degree of deflection	rated spe	ced Control rod travel	Degree of deflection of control	speed	Control rod travel		eeve travel ontrol travel
f control ever	rev/min	mm	of control lever	rev/min	mm	lever	rev/min 8	mm 9	rev/min	mm 11
	L	3	4	5	6] 3	110	<u> </u>
EP/RSV	325-14	00 A8 B 47	I DL							
ca.65	1400 1430 1450 1400 1440 1600	10,0 7,4 4,7 9,8-10,2 3,4-6,7 0-1	*			ca.21	325 200 325 500 700	5,5 19 - 21 5,2-5,8 1,4-3,6 0 - 1	800	0 0,4-0,0 0,9-1, 1,2-1,0
EP/RSV	325-11	50 A8 B 47	4 DL*							
ca.53	1150 1170 1190 1150 1200 1300	10,0 8,0 5,8 9,7-10,2 4,0- 5,6 0 - 1	*			ca.21	325 200 325 400 500	5,5 19 - 21 5,2-5,8 1,5-3,2 0 - 1		0 0,5-0, 0,6-0,
EP/RSV ca.65	325-14 1400 1430 1450 1400 1440 1600	10,0 7,4 4,7 9,8-10,2 3,4-6,7 0-1	DL * **	0		ca.21	325 200 325 500			0 0,5-0, 1,4-1,
		50 A8 B260	DL*							
ca.53	1150 1170 1190 1150 1200 1300	10,0 8,0 5,8 9,7-10,3 4,0- 5,6 0 - 1	sp ** wi	ring	auxiliary	ca.21	325 200 325 400 500	19 - 21 5,2-5,8		0 0,5-0, 0,6-0,

1

C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load o Control-ro Test oil te	delivery	Rotational-speed limitation	Fuel deliv	ery characteristics	Starting fuel delivery idle switching point	intermediate rotational speed Torque-control travel
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ^{\$} /1000 strokes 5	rev/min cm ³ /1000 strokes 6 7	rev/min mm
F 48 I	PS / 2650 U/mi	n				
1325	49,0-51,0	1340	785	43,0 - 46,0		1,3
B 46,	5 PS / 2800 U/I	min		arm university of representations are not seen as the second of the seco		ga ga sir direct pagaminaturations
1400	49,0-51,0	1420	785	42,0 - 45,0		1,3
F 46 I	PS / 2500 U/mi	n				activa allebasely et a erren. De en maniente en suprimente suprimente en al allebasele
1250	47,0-49,0	1270	785	42,5 - 43,5		1,3
	PS / 2650 U/mi				and the second s	
1325	47,5-49,5	1340	785	40,5 - 43,5		1,3
B 43,	5 PS / 2500 U/					
1250	45,5-47,5	1270	785	40,0 - 43,0		1,3
B 42	PS / 2300 U/mi	n				gardia maska at Ar Andak (A Abanana a spekkayana na saka (A Abanana a Saka Abanana a saka Abanana a Saka Abana
1150	44,0 - 46,0	1170	800	42,5 - 45,5		0,75
B 41,	5 PS / 2500 U/	min		angan nganada maka araya, a da gapin di Bramah Almagada dinin di		
1250	44,5 - 46,5	1270	785	38,5 - 41,5		1,3
	PS / 2300 U/mi	n		An hange, ang ann agus, ay ay, ang ag an h-alf fin dhife a dh'air ay aith Alf Bhar		
1150	42,0 - 44,0	1170	800	40,5 - 43,5		0,75
B 40	PS / 2150 U/mi	n				
1075	43,0 - 45,0	1090	800	43,0 - 46,0		0,75
B 38,	5 PS / 2150 U/	min				
1075	41,5 - 43,5	1090	800	41,5 - 44,5		0,75
B 37	PS / 2300 U/mi	n				
1150	39,0 - 41,0	1170	80 0	37,5 - 40,5		0,75
B 37	PS / 2000 U/mi	n		والمنطقة المنظر المنطقة المنطقة والمنطقة والمنطقة المنطقة المن		<u></u>
1000	41,5 - 43,5	1020	800	42,5 - 45,5	×	0,6
B 36	PS / 2150 U/mi	n				
1075	39,0 - 41,0	1090	800	38,5 - 41,5		0,75
1000	PS / 2000 U/mi 38,0 - 40,0	n 1020	800	38,0 - 41,0	* 1 mm less co	0,6

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (Rotational-speed limitation		ery characteristics	idle switchir		rotational	1	
rev/min cm³/100		rev/min	1	cm ³ /1000 strokes		cm ³ /1000 strokes	rev/min	mm.	
1 2		3	4	5	6	7	8		
B 33 PS / 18	300 U/min	1							
900 39,5	- 41,5	910	800	40,5 - 43,5			0	,45	
B 31 PS / 18	300 U/min	1							
900 37,0	- 39,0	910	800	38,0 - 41,0			0	,45	
B 28 PS / 19	00 U/min	1							
750 40,0	- 42,0	760	700	41,0 - 44,0			0	,2	
B 26 PS / 15	500 U/mir)							
750 37,0	- 39,0	760	700	38,0 - 41,0			. 0	,2	
A 37 PS / 23	300 U/mir)							
1140 42,5	- 44,5	1150	-	-					
A 34 PS / 20	000 U/mir)							
990 41,5	- 43,5	1000	-	-					
A 31 PS / 18	300 U/mir)							
890 41,0	- 43,0	900	-	-					
A 26 PS / 1	500 U/mir	1							
740 41,5	- 43,5	750	-	-					

Note:

Engine output (F, B, A) and speed are indicated on the engine nameplate; adjustment data can be taken accordingly from Section C.

These values have been compiled in accordance with documentation and with the approval of KHD;

Standard setting, pages 1 and 2; throttled engines, pages 3 and 4.

When setting the reduced full-load deliveries, the dimension a (pages 3 and 4, Section C, Column 8) is to be viewed merely as a pre-setting; the dominant factor in such cases is the delivery as per Columns 2 and 5 with re-use being made of the spring retainer adjusted/readjusted by KHD.

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 BOL 5,0 c Edition

PES 6 A 85 C 320 RS 2275, Y, V RS 2275

RQV 250-1150 AB 594 R

supersedes

RQV 250-1025 AB 756 R ./. company Bolinder

TD 50 A

Values apply to fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0+0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference Control rotravel cm³/ 100 strokes mm 2		Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6	
	12	5,6 - 6,0	0,4				
1000	6 9	0,4 - 1,0 2,4 - 3,1				2,6 + 0,1*	
200	9	1,4 - 2,3					

accordingly.

B. Governor Settings

..AB 594 R

Upper rated :	Opper rated speed Degree of rev/min Control rod (18)			l			Lower rated speed Degree of Control rod			leeve travel
deflection of control lever	Control rod travel mm	travel	deflection of control lever	rev/min 5	mm 4	deflection of control lever 7	rev/min	mm 3	rev/min	mm
ca.68		-	2	-	-	ca.14	200 300 400 500 650 800	6,6-8,0 4,0-6,3 2,9-3,8 2,3-3,6 1,0-2,2 0	-	•

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	stop	Rotational-speed 2b timitation intermediate speed	Fuel deliv	rery characteristics 5a	Starting Idle switchin		Torque-control 5 trave! Control rod	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	58,5 - 60,5 58,5 - 60,5	1170 1170	600 600	53,5-56,5	1250	ion max. 4	(ca. (ca.	RW 6) RW 6)
S	ee page 2!							./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

5.71

BOSCH

B. Governor Settings

Degree of deflection of control lever 1	travei	rev/min Control rod travel mm rev/min 3	Intermed	liate rated	speed	Control- lever deflection in degrees 7	- Lower rev/min 8	rated speed Control rod travel mm	(0)	rque control Control rod travel mm
ca.68	1025 1050 1100	15,0-18,2 11,2-15,8 4,0-10,6		-	•	ca.12	200 300 400	6,4-8,0 4,4-6,4 3,7-4,6	-	-
29	1140 1200	0 - 6,4 0					550 720	1,9-3,5 0		

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop	6 Rotational-speed limitat. 3a Fuel delivery characteristics			Starting f	uel delivery 5	4a) Idle stop	
	emp. 40°C (104°F) cm ³ /1000 strokes	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	Control rod travel mm 9
1000 1000								
At nothers	ng of shutoff (= 0, n = 60, n stop lever to m the starting a	= 1025 and ve the cont	rol ro	50 min ⁻¹ it mus d to control-ro ion.	t be p	ossible wi el O (stop	th)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

	r rated speed Control rod travel mm	Intermed	liate rated	speed 6	Control- lever deflection in degrees 7	rated speed Control rod travel mm	©	rque control Control rod travel mm
29								

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil te	II-load stop emp. 40°C (104°F) cm³/1000 strokes 2	Rotational- speed limitat. Note: changed to) rev/min 3	Fuel delivery characteristics rev/min cm³/1000 strokes 4 5		Starting fuel delivery 5 ldle rev/min cm³/1000 strokes 6 7		Control rod travel mm 8 9	
				•				
						- 1		

Checking values in brackets

* 1 mm less control rod travel than col. 2

A15

Testoil-ISO 4113

①

Test Specifications Fuel Injection Pumps (1) and Governors

VDT-WPP 001/4 BOL 5,0 b Edition 5.71

En

PES 6 A 85 C 320 RS 2188, Z, Y, X, V RQV 250-1150 AB 594 R

supersedes

company

engine

6.67 Bolinder D 50 A

Values apply to fuel-injection test tubing 1 680 750 015

All tast specifications are valid for Bosch Fuel Injection Pump Test Benches and Testurs

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	12	5,6 - 6,0	0,4			2,6 + 0,1* (max. 2,2-2,9)
1000	6 9	0,4 - 1,0 2,4 - 3,1				(1107. 232 233)
200	9	1,4 - 2,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated :	speed	1		Intermediate	rated spe	1	Lower rated	speed	1	Sliding s	leeve travel
Degree of deflection	rev/min Control	Control rod travel	(1a)	Degree of deflection		Control rod travel	Degree of deflection		Control red travel		①
of control lever	rod travel	mm rev/min	(2B)	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	шш
1	2	3		4	5	6	7	8	9	10	11
ca.68	1150 1200 1250 1330 1440	11,3-15 7,2-12	,2	-	-	-	ca.14	200 300 400 500 650 800	6,6-8,0 4,0-6,3 2,9-3,8 2,3-3,6 1,0-2,2	ı	-

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten rev/min	stop np. 40°C (104°F) 2	Rotational-speed 2b limitation intermediate speed rev/min 4a	Fuel deliv	pery characteristics 5a peed 5b cm ³ /1000 strokes	Starting Idle switchir rev/min		Torque- travel	Control 5 Control rod travel mm
1	2	3	4	5	6	7	8	9
1000	44,0-46,0	1170	600	42,0-46,0 d	1250 ispers	11,5-16,5 sion max 4	(ca.	RW 6)
						·		•/-

Checking values in brackets

* 1 mm less control rod travel than col. 2

A18

BOSCH

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estoil-ISO 4113

^{*} In the case of greater dispersion alter the delivery-valve spring pre-tension

C. Settings for Fuel Injection Pump with Fitted Governor

engine po Full-load of Control-ro Test oil te	delivery	Rotational-speed imitation	Fuel deli	very characteristics	Idle	fuel delivery	rotationa	Intermediate rotational speed Torque-control travel	
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm	
1	2	3	4	5	6	7	8		
1000	31,5-33,5 Z			!			.,		
1000	35,5-37,5 <u>Y</u>								
1000	37,5-39,5 X								
1000	40,0-42,6 V								

Testing of shutoff device:

At n=0, n=1150 and n=1250 min⁻¹ it must be possible with the stop lever to press the control rod out of the starting and full-load position to control-rod travel 0 (stop).

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 HEN 6,1 1 Edition 3.70

PE 6 A 75 C 412 RS 1069

RQV 200-1300 AA 449 D -1250 AA 450 D supersedes company

engine.

11.64 **Henschel** 522 DPF 522 DP ./.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (fr/ m BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (tornue-control valve) mm 6
1000	9	4,7 - 5,1	0,4			
	6 15	1,9 - 2,6 10,5 -11,5				
200	6	0,9 - 1,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

..AA 449 D

Upper rated s	speed			Intermediate	rated spe	eed	Lower rated	speed		rel 3 rev/min mm 10 11		
deflection	rev/min Control	Control rod travel	(1a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0	
of control	rod travel mm	ten/min	(2a)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/mเก	mm	
1	2	3		4	5	6	7	8	9	10	11	
ca.66	1300 1350 1400 1450 1500 1550	15 - 18 10,6-15 5,8-11 0 - 8 0 - 4	,8				ca.10	100 200 400 600 700 830	6,6- 8 4,5-6,8 2,8-3,8 1,4-2,8 0,4-1,6	1000 800	0 0,1-0,3 0,7-0,9 1,0-1,2 1,2-1,4	

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil terr		Rotational-speed (2b) Ilmitation Intermediate speed	Fuel delivingh idle s	rery characteristics 5a	Starting Idle switchir	\circ	Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1300	59 - 61 ,	1300	1000 700 500	60,0-63,0 62,5-65,7 58,5-62,5		To be specif by customer	ied	
								./.

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

..AA 450 D

Upper r Degree of deflection of control lever	Degree of deflection of control			rated spe rev/min 5	ed Control rod travel mm	Degree of deflection of control lever rev/min mm 2 bower rated speed Control rod travel of travel mm 7 8 9			rev/min	que control Control rod travel mm 11
ca.65	1250 1300 1350	15 - 18 10 - 14,2 5 - 10,4	-	е.	-	ca.10	100 200 400	7 - 8 5 - 7 2,5-3,8	1250 1100 900	0 0,2-0,4 0,6-0,8
⑤	1400 1490	0 - 6,4						1,2-2,5	700 500	0,9-1,1 1,0-1,2

1.1

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil temp	ad stop 0.40°C (104°F) cm ³ /-1000 strokes 2	Rotational- speed fimitation Note changed to) rev/inin		el delivery tracteristics cm ³ /1000 strokes 5	idie	fuel delivery cm ³ /1000 strokes 7	(5a) Idle rev/min 8	stop Control rod travel mm
1230	56 - 58	1270	1000 700 500 69	66,0 - 59,0 58,5 - 61,5 56,5 - 60,5			To be by cus	specified tomer

Checking values in brackets

*1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure – in bar gauge pressure (g p)

Pump/governor	Setting	Measurement	diminution Control rod trave!- ರೇference
	(gp) bar	(gp) bar	mm (1)
			·

Notes.

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps and Governors

RS 1010

40

VDT-WPP 001/4 DAI 1,8 t

2. Edition

supersedes

EP/M 60 A 153 DL

EP/M 60 A 156 DL See page 2!

EP/M 60 A 155 DL, A 157 DL

company

3.65 Daimler-Benz

engine (

OM 636

All test specifications are valid for Bosch Fuel injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

PES 4 A 50 C 410 RS 1010

Port closing at prestroke

1.7 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm 1/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 5	Fuel delivery cm 1/100 strokes 6	Spring pre-tensioning (torque-control valve) mm 7
1000	12	2,2-2,7	0,3			
	9 18	0,8-1,4 4,5-5,2				
200	9	0,6-1,1				

Adjust the fuel delivery from each outlet according to the values $m_{\tilde{\tau}}$

B. Governor Settings

	Leakage		Control- limitatio breakay		Control rod travel test Auxiliary sp auxiliary ca			Torque co	ontrol	
Torque control travel	Vacuum pressure drop	Time at least		Control rod travel		Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel
mm	mm water col	s	mmw c	mm	mmwc	mm	mm w c	ώw	mm w c	mm
1	2	3	4	5	6	7	8	9	10	11
= rotational sp adjust breakay	500-480 age 2! veltest (cots 4- eed 500 rev/mii way (cots 4-5) nt (8 8-9 - C 7-	11) n by mean:			-	-	490 530 600 700	13,0* 11,3-12,8 7,4- 9,6 2,0- 6,0	0 50 100 220 300	13,9-14,1 13,8-14,0 13,4-13,7 13,0-13,3 13,0

C. Settings for Fuel Injection Pump with Fitted Governor

	Full load stop screw Fest oil temp 40°C (104°F)			ery character	estics	idle (sto idle (imb		Control road trave from full-load to lidle	
rev/min	Vacuum mm wat col cm³/1000 strokes 2 3		rev/min Vacuum mm wat col 4 5		cm³/1000 strokes 5	rev/min	Vacuum mm wat col	mm cm ³ /1000 strokes 8	
1375	460	30,2-31,2	1300 900 500	250	29,7-31,7 29,4-31,4 30,7-33,7				

Checking values in brackets

3.66

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Féderale d'Allemagne par Robert Bosch GmbH.

	Leakage Control rod travel limitation breakaway*		ก	Control	rod fravel test	d travel test Auxiliary spring auxiliary cam**			ontrol	
Torque control travel	Vacuum pressure drop	Time at least		Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel
mm	mm water col	s	mmw c	mm	mm w c	mm	mm w c	mm **	mm w c	mm
1	2	3	4	5	6	7	8	9	10	11
0,95 0,05 **	500-480	1				_	330 375 450 500	12,3 7,6-11,8 0 - 6,8 0 - 3,5	150 200 240 290	13,2-13,3 13,0-13,3 12,4-12,7 12,5

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil te	Full-load stop screw Test oil temp 40°C (104 F) Vacuum			Vacuum	cm / 1000 strokes	idle (stop idle (imb		Control road travel from full load to lidle mm cm=/1000 strokes
1	2	3	revimin 4	5	6	7		8
1100	290	28,4-29,4	850 500	200 70	30,7-31,7 29,9-32,9	•	-	-

Checking values in brackets

- By means of washers, set breakaway at WC 490 such that governor has regulated at WC 520 = 0.2 0.6 mm.
- ** By means of washers, set breakaway at n 1100 and WC 330 such that governor has regulated at WC 360 = 0.2 0.6 mm!

2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 MAN 7,2 b

En

PES 6 A 80 B 412 RS 460

RQ 250/1250 A 349 d

supersedes

company

MAN

engine

D 0836 M1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5 + 0,1

mm (from BDC)

Rolational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strakes 3	Oifference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	4,1 - 4,5	0,3			
	6 15	1,2 - 2,0 9,8 -11,2				
200	9	2,9 - 3,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

i	Checking of slider Full-load speed re			-	cifications (4)				Torque o	control 3	
revimin 1	Control rod travel mm 2	rev/min	Control rod travel rnm 4	Control red travel mm 5	rev/min 6	rev/min 7	Control rod travel rnrn 8	rev/min 9	Control rod travel mm 10		Control rod travel mm
550	15,6-16,4	550	16	1250 1280 1300 1320 1380	14,5-14,8 7,8-13,2 3,8-11,2 0 - 8,6 0	540	0	100 200 300 400 440	6,5-8,1 5,3-7,3 2,9-5,3 0 -1,9	1000	15,8-16 15,4-15,7 14,7-15

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	,	Starting fuel delivery Idle speed		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	mil traid cm ³ /1000 strokes/j mm 7		
1230	ũ8,5 - 70,5	650	650 800	68,5 - 71,5 70,0 - 73,0				

Checking values in brackets

28,10.60

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrusteing. ₹. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédàrale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps 2 and Governors

40

DAI 10,8 g 2 Edition 3.64

Eπ

RS 516,Ay, y PES 6 A 90 B 410 RS 494 RS 2020 v

RQ 250/1100 A 301 D A 425 D company engine.

supersedes

13.4.62 Daimler-Benz OM 326(172PS) *

(180PS)** (150PS)***

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 - 0,1

mm (from BDC)

RW 18

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	7,1 - 7,6	0,4			
	6 12	2,1 - 3,3 11,3 -12,8				
200	9	4,4 - 6,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che rev/min 1	Control rod travel	Full-load s Setting po rev/min 3	•	-	rev/min	Idle spec Setting p rev/min 7	Control rod travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
1000	14,7-15,3	1000	15	1100 1120 1140 1160 1220	14,6- 15 10 - 14 5 -11,5 0 - 8,6		0	150 200 250 300 420	6,4-8,1 5,5-7,5 4,3-6,4 2,8- 5 0		15,7-16,3 15,3-15,8 15 -15,3

Torque-control travel on flyweight assembly dimension a =

0,3

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting for	Control
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm
700	91,0 - 93,0	500	500 1080	90,5 - 93,5 92,0 - 96,0	100	14,9 - 15,9
					; ;	./.

Checking values in brackets

RS516 RS494

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 St., tgart 1. Printed in the Federal Republic of Germany Imprimé en République Fédérale d'Allemagne par Robert Bosch GmbH.

Checking PRG chec		Full load speed regulation Setting point Test specifications			cifications (4)					Torque control	
,	Control rod travel mm	rev/min	Control rod trave mm	Cor rai ta travel mm	rev/min	rev/min 7	Control red travel rnm 8	rev/min 9	Control rod travel mm	rev/min	Control rod travel mm 12
							•				
								Projection of the state of the			
		; ; <u>1</u>	1	<u> </u>				-			

Torque-control travel on flyweight assembly dimension a

Speed regulat

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	Full-load d governor d Test ou ten	elivery on control lever np 40°C (104 F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting to	tuel delivery
	rev/min	cm ³ /-1000 strokes	revimin 3	rev/min	cm ³ /- 1000 strokes 5	rev/min	cm ³ : 1000 strokes / mm
RS516y RS516Ay RS2020y	700	98,0 - 100,0	500	500 1080	94,5 - 98,5 98,5 -102,5	100	14,9 - 15,9
RS516 A 425 D	1000	91,0 - 93,0	500	500 700	88,5 - 91,5 89,5 - 92,5	100	14,9 - 15,9
				•	:		

Checking values in prackets

B. Governor Settings

	g of slider	$\overline{}$	Full load: Setting po	•		cifications		idle spec	-		cifications (5)	Torque c	<u> </u>
PRG chei	Control rod travel		rev/min	Control rod travel rmm	, Control , rod travel - mm	rev/min	(4)	1	Control rod travel		Control rod		Control rod travel mm
		+		-						!			
				i i	:	i			! !	•			† •
				•		1				: !	:		* * !
						!				t	i	1	
					:	!			:	•	1		1
					:	į.			<u>.</u>	<u> </u>	i	<u> </u>	1

Torque-control travel on flyweight assembly dimension a

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104 F)	Control rod stop	Fuel deliv	ery characteristics 36	Starting fi idle spee	Easter
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm²/-1000 strokes 5	rev/min 6	cm ² 1000 strokes / mm 7
					Si	
					Management of the second of th	
				† : !		:
					!	

En Checking values in brackets

B2

Testoil-ISO 4113

VDT-WPP 001/4 DAI 1,8 w 1. Edition

PES 4 A 50 B 410 RS 144,Z PES 4 A 50 C 410 RS 1010,Z EP/MZ 60 A 159 DL EP/MZ 60 A 160 DL supersedes company

Daimler-Benz OM 636.930

engine

(PKW)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

"Z" See page 2!

1,7 + 0,1 mm (from 80C)

estoil-ISO 4113

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ¹ /100 strokes 3	Ofference cm ¹ / 100 strokes 4	Control rod travel mm 5	Fuel delivery cm / 100 strokes 6	Spring pre tensioning (torque-control valve) mm
1000	12	2,2-2,7	0,3			
	9 18	0,8-1,4 4,5-5,2				
200	9	0,6-1,2				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Pe without .. z

	- C		Control-rod travel imitation breaksway*		Control rod travel test		Auxiliary spring auxiliary cam**		Torque control	
	Vacuum pressure drop			Control rod travel		Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel
	mm water col	l	mmw c	mm	mm w c	ALCO .	mm w c	enen	mmwc	mm
1 .	2	3	4	5	6	7	8	9	10	11
	page 2!		-	•	•	-		12,6* 8,5-10,3 2,0- 6,0	50 150 350	13,4-13,5 13,2-13,5 12,6-12,9
 rotational sp adjust breaker 	vel test (cols 4- reed 500 rev/mil way (cols 4-5) l int (B 8-9 - C 7-	n by mean								

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load stop screw Test oil temp. 40°C (104°F)			Fuel deliv	ery character	istics	idle (slo) Je (imb		Control road travel from full-load to I idle	
r evirnin 1	Vacuum mm wat col 2	cm³/1000 strokes		Vacuum mm wat col 5	cm³/1000 strokes 6	revimun 7	Vacuum mm wat col	mm cm-V1000 strakes 8	
1700	450	30,2-31,2	1000 500	•	29,2-31,2 29,7-31,7	0	0	6,4-6,8	
-				ca.620 rsion ma	6,5-8,5 k. 1,5				

Checking values in brackets

8.66

Testoil-ISO 4113

B. Governor Settings

	Leakage		Control limitation breakay		Control rod travel test		Auxiliary auxiliary		Torque control	
Torque control travel	Vacuum pressure drop	Time at least		Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel
mm	mm water col	s	mmwc	mm	mm w c	mm	rnm w c	mm **	mmw c	rnm
1	2	3	4	5	6	7	8	9	10	11
0,9+0,1	500-480	1(Ö -	-	_	-	475 575 700	11,4* 7,1-8,1 2,6-5,4	50 150 350	12,3 12,0-12,3 11,4-11,7
rotational sp adjust breakay	rei test (cols 4- eed 500 rev/mii way (cols 4-5) l nt (8 8-9 - C 7-	n by mean								

C. Settings for Fuel Injection Pump with Fitted Governor

	Full foad stop screw Fest oil temp. 40 C (104 F)			rery characteri	stics	idle (sto) idle (imb		Control road trave from full load to lidle
rev/min	Vacuum mm wat col	cm1/1000 strokes	ting that	Vacuum mm wat cot 5	cm ^{-/} /1000 strokes 6	rev/min	Vacuum mm wat col	mm cm ¹ /1000 strokes 8
1700	450	25,7-26,7	1000 500	205 4 5	24,2-26,2 24,7-26,7	0	0	5,2-5,6
			250 disper	ca.580 sion max	6,5-8,5 . 1,5			
							d	

Checking values in brackets

^{*} By means of washers, set breakaway at HC 475 such that governor has regulated at HC 500 = 0.2 - 0.6 mm.

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 MB 5,1 c Edition 8.69

PES 6 A 70 B 410 RS 64 Z PES 6 A 70 B 410 RS 1034,Z

ROV 250 - 1400 A 140 D RQV 250 - 1500 A 49 D supersedes DAI 5,1 C (3.64)company Daimler-Benz engine. OM 321

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Sattings

Port closing at prestroke

1.9 + 0.1

mm (from BDC)

Rotational speed rev/min il	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fual delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,5 - 7,0	0,3			
	6	1,2 - 1,9				
	18	11,1 -11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250 - 1400

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
	rev/min Control rod travel mm	Control rod travel mm rev/min	(a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	(1) mm
65 <u>+</u> 1,5	1400 1440 1520 1600 1660	15 - 17 11,6-15 4,4- 9 0 - 4	, 6				10 <u>+</u> 1,5	150 250 400 700 950	7,4- 8 5,4- 7,4 3,6- 4 1,7-3,4	1400 1200 800	
							3a				

Torque control travel a = 1,0

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		imitation intermediate speed	Fuel deliv high idle s	ery characteristics (5a)	Starting Idle switchir	\mathbf{O}	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4	ten/miu	cm ³ /1000 strokes	rev/min cm³/1000 strakes		rev/min	travei mm
1	2	3	4	5	6	7	8	9
1000	48,5 - 50,5	1420	500 1400	49,5 - 52,5 49,5 - 53,5		mind.7,9		
								./.

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

B. Governor Settings

Upper rated s	speed		Intermediat	Intermediate rated speed			speed		Stiding st	Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	mm	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm 11	
66 <u>+</u> 1,5	1500 1540 1620 1700	15 - 18 12 - 16 5,8-11,2 0 - 5,8		-	-	10±1,5	150 250 400 600 980	6,3-8 4,2-6,6 3,3-3,8 2,2-3,8		0,2-0,4 0,5-0, 0,9-1,	

250 - 1500

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed (2b) limitation intermediate speed	character high idle s	istics	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min (48)	rev/min	cm ³ /1000 strokes	rev'min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
1500 "Z"	46,5 - 48,5	1520	1000 500	44,5 - 47,5 45,0 - 49,0		·		
"Z" 1500	51,0 - 53,0		1000 500	48,5 - 51,5 50,5 - 54,5				

Checking values in brackets

* 1 mm less control rod travel than co; 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Setting Gauge pressure = bar	Measurement Gauge pressure = bar	diminution Control rod travel- difference mm
		÷

En

2

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 DAI 4,6 a 1 Edition 3.64

En

PES 6 A 70 B 410 RS 64 RS 122

RQ 250/1400 A 200 D See page 2! supersedes

1.5.61

company

Daimler-Benz

gine. OM 312

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	12	6.5 - 7,0	0,4			
	6 18	1,2 - 1,9 11,1 -11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider	Full-load s	•	_	cifications (4) Setting point Test specifications (5)			Torque control 3			
rev/min	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control red travel mm	rev/min	rev/min 7	Control red travel mm	rey/min	Control rod travel mm 10	rev/min	travel
1300	13,6-14,4	1300	14	1400 1420 1450 1480 1550	13,6- 14 10,5- 14 3 -11, 0 - 8			150 200 300 400 430	6,4-8,2 5,5-7,8 2,7-5,3 0 -1,5	500 600 1000	15,8-16,8 15,7-16,2 15,4-15,9 14,2-14,6 14 -14,1

Torque-control travel on flyweight assembly dimension a =

Testoil-ISO 4113

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 36	Starting for Idle spee	uel delivery d Control
rev/min	cm ³ /~1000 strokes 2	rev/min	rev/min	cm ³ /-1000 strokes	rev/min 6	rod travel cm ³ /1000 strokes:// mm 7
1000	43,5 - 45,5	500	500 700 1380	44,5 - 48,5 45,5 - 48,5 43,5 - 46,5	100	mind. 7,9
						./.

Checking values in brackets

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
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PRG che	g of slider ck Control rod travel mm	Full load s Setting po		-	rev/min	Idle spec	Control rod travel	Test spe	cifications Control rod travel	•	Control rod (3)
1	2	3	4	5	6	7	8	9	10	11	12

Torque-control travel on flyweight assembly dimension a

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil ten		Control rad stop (3a)	Fuel delive	ery characteristics (3b)	Starting to	d Control
rev/min	cm ³ /~ 1000 strokes 2	rev/min 3	revimin 4	cm ³ : 1000 strokes 5	revimin 6	rad travel cm ³ : 1000 strokes / mm 7
RS122 1000	32,0 - 34,0	500	500 700 1380	35,0 - 38,0 33,5 - 36,5 32,5 - 35,5	100	mind. 7,9

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

rev/min decreasing pressure - in bar gauge pressure Test at n diminution Setting Measurement Pump/governor Control rod traveldifference Gauge pressure bar mm (1) Gauge pressure

Notes

(1) when a =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

VDT-WPP 001/4 MB 3,8c Edition 5.72

En

PES 4 A 80 C 410 RS 2094 EP/RSV 250-1225 A1B424DA RS 2206 A1B483DL RS2094, RS2244 EP/RSV 300-1200 A1B424DL (2) RS 2094Z 300-1200 A1B424DL (3) RS2094, RS2244A EP/RSV 300-1325 A1B424DL (4) RS 2094Z 350-1200 A1B631DL (5)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

 $supersed \varepsilon s$ 5.71 companyDaimler-Benz

engine OM 314

Ahlmann power shovel (65 bhp - 1)

Stat engine 75PS-2)

Yale+.Towne(63PS-3)

Stat. engine 78PS-4)

Yale +Towne(66PS-5)

Â.	Fuel	Injection	Pump	Settings
----	-------------	-----------	-------------	-----------------

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery "C" u . "D" cm³/100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery "C" u. "D" cm²/100 strokes Z 3	Spring pre-tensioning (torque-control valve) mm 6
	9	5,5 - 6,0	0,4	9	4,3 - 4,8	
1000	6 15	2,2 - 3,0 11,5 -12,8		6 15	1,8 - 2,6 10,3 -11,6	
200	6	1,3 - 2,2		9	2,4 - 3,4	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250-1225 (1)

Uppe Degree of deflection of control lever	deflection of control lever 1 2 3			Intermediate rated speed 4 5 6			rev/min	Control rod travel mm	3 Fo	rque control Control rod travel mm
ca.69	1225 1280 1320	16,0 10,4 5,6		without auxiliar spring with auxiliary spring			250 100 250	6,0 19 - 21 5,7-6,3	1200	0
2 a	1300 1350 1450	6,0-9,5 2,2-4,7 0 - 1					1	2,0-4,0 0 - 1	500	0,3-0,7 0,5-0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ili-load stop	6 Rotational- speed limitat	speed limitat Characteristics		Starting f	uel delivery 5	4a Idle stop	
rev/min cm³/1000 strokes 1 2		Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ¹ /1000 strokes	rev/min 8	Control rod travel mm
1200	49,0 - 51,0	1230	900 500	47,5 - 50,5	100	7,9 - 9,9	250	6,0
1180	54,5 - 56,5	1225 *	800 500	41,0 - 44,0 46,5 - 49,5	100	13,2 -13,8	300	6,0
1180 1325	49,5 - 51,5 56,0 - 58,0	1225 * 1370 *	500 500 800	41,5 - 44,5 38,5 - 41,5 46,5 - 49,5		13,2 -13,8 13,2 -13,8		6,0
1180		1225 *	900	44.0 - 47.0		13,2 - 13,8	1	6,0 6,0

Checking values in brackets

44.5 - 47.5

* 1 mm less control rod travel than col 2

0,5-1,0 mm control rod travel less than column 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung © 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

Ţ	Upper rated speed		Intermediate rated speed			Lower rated speed			Sliding sleeve travel		
1	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Torque-control trave	
		rev/min	mm	lever	rev/min	mm	lever	rev/min	mm	rev/min	mm
1	1	2	3	4	5	6	7	8	9	10	11

			- 1200		-			
300-120	0 A1B4	24D (2,	3)					a
ca.67	1200 1250 1290	16,0 11,0 6,4	*		ca.27	300 100 300	6,0 19-21 5,7-6,3	** as required
	1270 1350 1440	7,0-10,2 1,0-4,0 0-1	**	·		400 580	3,2-4,6 0 - 1	
200 422)	045 (4)						
300-132	.5 A184	24D (4)						
ca.73	1325 1370 1400	16,0 10,5 6,2	*		ca.27	300 100 300	6,0 19 - 21 5,7-6,3	
	1380 1420 1520	7,5-10,2 2,7-5,0 0 - 1	**			400 580	2,3-4,5 0 - 1	**
350-120	10 A1B6	31D (5)	c					
ca.66	1200 1240 1280	14,0 9,6 4,8	*	without auxiliary spring	ca.27	350 200 350	6,0 19 - 21 5,7-6,3	1180
	1250 1300 1380	7,0-9,6 2,4-4,4 0 -1,5	**	with auxiliary spring		450 600	3,0-4,4 0 -1,5	700 0,2-0,4 450 0,9-1,1

estoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

MB 8,0 e Edition 10.69

<u>En</u>

PE 6 A 90 C 410 RS 2124

RQV 300-1325 AB 689 DL AB 698 DL EP/RSV 300-1200 A1 B479DL 300-1100 A1 B530DL supersedes

company: engine: Daimler-Benz OM 327

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1 mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	9	6,4 - 6,9	0,4			
1000	6 15	2,9 - 3,8 13,8 -15,3				
200	6	0,2 - 1,0				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV... AB 689 DL, .. 698 DL

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding sleeve travel	
deflection	rev/min Control rod travel mm 2	Control rod travel mm rev/min 28	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	1 mm 11
ca.68	1325 1380 1440 1500 1590	15,0-18,0 10,5-15,5 5,0-11,0 0 - 7,0		-	-	ca.12	100 250 400 600 750	6,3-8,0 5,1-6,8 3,1-4,6 1,0-2,4	900	0 0,1-0,3 0,4-0,6 0,6-0,8
						3a				

Torque control travel a = 0.7 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rot Test oil ten		Rotational-speed 2b fimitation intermediate speed			Starting die switching	•	Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	8
1300	75,5-77,5	1325:bei 135 0,5-1,0mm RW less than column 2		73,5-76,5 75,5-78,5 68,5-71,5	100	13,7-14,3	by cu	specifie stomer 8 D)

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

EP,	/RSV	300-	1200	A1	В	479	DL

Upper rated s	peed		Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve travel
		Control rod (1	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1
of control lever	rodtravel mm	mm rev/min (2	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.66	1220 1250 1300 1300 1350 1450	13,2 7,2 5,8-8,8 2,0-5,0	without spring with au spring	auxi	liary	ca.28	300 100 300 450 700	7,5 19,0-21,0 7,2-7,8 3,0-5,2 0 - 1	1000 800	0 · 0,4-0,6 0,9-1,1 0,9-1,1

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	elivery I stop ip 40°C (104°F) (2)	Rotational-speed (2b) ilmitation intermediate speed	Fuel delivery characteristics 5a high idle speed 5b		Starting (Idle switchin		Torque- travel	Control rod
rev/min	cm ⁴ 1000 strokes	rev/min 4a	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm3/1000 strokes 7	rev/min 8	travel mm 9
1200	74,0-76,0	1220	1000 800 500	71,0-74,0 69,0-73,0 65,0-69,0	100	15,7-16,3	300	7,5

Checking values in brackets

B. Governor Settings

EP/RSV 300-1100 A 1 B 530 D

Upper rated s	peed .			Intermediate	rated spe	ed		Lower rated	speed		Sliding sl	eeve travel
0	rev/min	Control rod Iravel	(la)	Degree of deflection	1	Control rod travel		Degree of deflection		Control rod travel		(1)
	rod travel mm	mm rev/min	(2a)	of control lever	rev/min	mm (4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
ca.62	1100 1140 1190 1200 1250 1350	12,2 6,6 5 - 7 1,8-4,4	ļ	without spring	auxi	liary		ca.27	300 100 300 400 500 650	7,5 19 - 21 7,2-7,8 4,8-6,1 0,6-4,1		0 0,8-1,0 0,8-1,0
								За			<u> </u>	

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		intermediate speed	Fuel deliv high idle s	peed 5b	Starting Idle switchir	fuel delivery 6	Torque- travel	Control rod
rev/min 1	cm³/1000 strokes	rev/min (4a)	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ⁴ /1000 strokes 7	rev/min 8	travel mm 9
ca.10	mm RW	1120			100	15,7-16,3	300	7,5
- Car	ry out adjust	ment on engin						
						•		

Checking values in brackets

* 1 mm less control rod travel than col 2

En

^{* 1} mm less control rod travel than coi 2

Test Specifications Fuel Injection Pumps (A) and Governors

40

MB 8,7 h
1. Edition

E9		
PE 6 A C 410 RS 2124, Z EP/RSV 300-1100 A 1 B 568 D (1), (2)	supersedes	
RS 2124 EP/RSV 300-1100 A 1 B 479 D (3)	•	Daimler-Benz
RS 2124 EP/RSV 350- 800 A 1 B 681 D (4)	company	OM 360
D RS 2124 EP/RSV 350-1250 A 1 B 690 D (5)	engine	_
RS 2124 EP/RSV 350-1150 A 1 B 732 D (6)		(117 PS - 1)
RS 2124 EP/RSV 350- 900 A 1 B 727 D (7)		(127 PS - 2)
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers		(150 PS - 3)
A. Fuel Injection Pump Settings		(110 PS - 4)
		/4 CO DC E C)

Port closing at prestroke

Testoil-ISO 4113

2.15 + 0.1

mm (from BDC)

(110	P 3	_	4)
(160	PS	-	5-6)
(132			

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	6,4 - 6,9	0,4			
200	6 15 9	2,8 - 3,8 13,8 -15,3 3,7 - 4,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV 300-1100 A 1 B 568 D (1 - 2)

Degree of deflection of control lever	r rated speed Control rod travel mm	cev/min Control rod travel mm rev/min	Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.65	1100 1170 1220 1200 1250 1340	16,0 10,4 4,6 4,6-8,8 1,6-4,2 0 - 1	spri	auxil		ca.27 ry	300 150 300 400 600	6,0 19 - 21 5,7-6,3 3,2-4,5 0-1	1080 700 330	0 0,6-0,8 1,2-1,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

Note		naracteristics	loie	Starting fuel delivery 5 4a Idle st		
changed to) rev/min 3	rev/min 4	cm\$1000 strokes 5	rev/min 6	cm∳1000 strokes 7	rev/min 8	Control rod travel mm
1125-1135*	700 500	53,5-56,5 54,5-57,5	100	ca.11,9	300	6,0
	700 500	70,5-73,5 70,0-73,0				1
	rev/min 3	1125-1135* 700 500 700	rev/min rev/min cm3/1000 strokes 5 1125-1135* 700 53,5-56,5 500 54,5-57,5 700 70,5-73,5	rev/min rev/min cm*1000 strokes rev/min 6 1125-1135* 700 53,5-56,5 500 54,5-57,5 700 70,5-73,5	rev/min rev/min cm*1000 strokes rev/min 6 rev/min 6 rev/min 6 7 1125-1135* 700 53,5-56,5 100 ca.11,9 700 70,5-73,5	rev/min 3

Checking values in brackets

12.74



^{* 1} mm less control rod travel than col. 2

В.	Gov	ernor	Settings
----	-----	-------	----------

B. Gove	ernor	Setting	S		EP/	RSV_300-1	100 A 1	B 479	D (3)	MB 8,7	7 h -
Upper rated s	peed			Intermediate			Lower rated			Stidings	leeve travel
deflection	rev/min Control	Control rod (travel	1a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel	Silding s	1
of control lever	rodtravei mm	rev/min (2a)	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.56	1100 1150 1170 1150 1200 1280	16,0 9,8 5,4 7,0-11,0 2,3-4,7		*			ca.21	300 200 300 400 550	6,0 19 - 21 5,7-6,3 2,9-4,3 0 - 1		0 0,1-0,3 0,4-0,6
	1200	1					(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	stop	Rotational-speed 2b iimitation intermediate speed			Starting Idle switchir		Torque- travel	control 5
rev/min 1	cm\$1000 strokes	rev/min 4a	rev/min	cm ² /1000 strokes	rev/min	cm3/1000 strokes	rev/min 8	travel mm
1080	80,5-82,5	1125-1135*	700 500	81,0-84,0 76,0-79,0	100	ca.11,9	300	6,0

Checking values in brackets

± 1,0

* I mm less control rod travel than col 2

B. Governor Settings

EP/RSV 350-800 A 1 B 681 D (4)

Upper rated s	peed			Interm	nediate	rated spe	ed		Lower rated	speed		Sliding sl	eeve travel
Degree of deflection		Control rod travel	1a)	Degre	tion	· · · · · · · · · · · · · · · · · · ·	Control rod travel		Degree of deflection	l	Control rod travel	onding o	1
of control lever	rod travel		2a)	of con lever	itrol	rev/min	тт	4	of control lever	rev/min	mm 3	rev/min	mm
1	2	3		4		5	6		7	8	9	10	11
ca.42	800 850 880	16,0 10,1 5,2		*	with spr	l	uxiliar	·у	ca.21	350 200 350	5,5 19 - 21 5,2-5,8	800 400	0 0,5-0,7
	810 870 960	ca.8,5 ca.3,0 0,3-1,0		**	with spri		liary		3 a	450 560	1,7-3,4 0 - 1		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		intermediate speed				fuel delivery 6	Torque- travel	Control rod	
rev/min	cm ³ /1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min	cm ⁴ /1000 strokes	rev/min	travel mm	
1	2	3	4	5	6	7	8	9	
800	61,0-63,0	820-830*	500	63,0-66,0	100	ca.11,9	350	5,5	
			870-	390 3,0 mmRW					

Checking values in brackets

* 1 mm less control rod travel than col 2

13	
4	
S	ı
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5	
St	
Õ	١

(1) Uppe	r rated speed	rev/min	Interm	Intermediate rated speed			Low	er rated speed	3 Torque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm 11	
ca.72	1250 1300 1350	16,0 11,6 5,4	*			ca.28	350 200 350	6,0 19 - 21 5,7-6,3	1230 400	0 0,5-0,7	
ca.69	1260 1325 1400	ca.8,6 ca.3,6 0,3-1,0	**				450 620	2,9-4,5 0 - 1			

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat.		uel delivery naracteristics	Starting f				
rev/min cm³/1000 strokes 1 2		Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strakes 7	rev/min 8	Control rod travel mm 9	
1230	70,0-72,0	1265-1275*	900 600	66,5-69,5 65,5-68,5	100	ca.11,9	350	6,0	
			1320	- 1335 3,5 mm RW					
		·							

Checking values in brackets

± 1,0

* 1 mm less control rod travel than col. 2

B. Governor Settings EP/RSV 350-1150 A 1 B 732 D (6)

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermediate rated speed 4 5 6			Control- lever deflection in degrees 7		rated speed Control rod travel mm	11 0 1	rque control Control rod travel mm
ca.59	1150 1190 1220	16,0 10,6 5,8		without spring	auxi	ca.24 liary	350 200 350	6,0 19 - 21 5,7-6,3	1130 500	0 0,4-0,6
ca.57	1150 1220 1300	ca.9,5 ca.3,5 0,3-1,0	**	with au spring	xilia	ry	450 600	2,6-4,2 0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

	li-load stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop	
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1130	74,0 - 76,0 (73,0 - 77,0)	1165-1175*	800 600	77,5-80,5 (76,5-81,5) 75,5-78,5 (74,5-79,5)	100 1210	ca. 11,9 - 1225 3,5 mm Rk		

Checking values in brackets

* 1 mm less control rod travel than col. 2

350-900 A 1 B 727 D (7)

Degree of deflection	ction travel travel			Intermediate rated speed 4 5 6				rated speed Control rod travel mm	3 To rev/min 10	rque control Control rod travel mm
ca.56	900 1000 1050	16,0 9,0 4,0	without auxiliar spring			ca.30	350 200 350	6,2 19 - 21 5,9-6,5	880	0
20	1050	7,3-10,2 2,7- 6,1 0,3- 1,0	with sprin	auxili g	ary		450 560	1,9-3,9	500	0,9-1,1

C. Settings for Fuel Injection Pump with Fitted Governor

- 1	2b Full-load stop Test oil temp, 40°C (104°F)		6 Rotational- speed limitat.	3a Fu	el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
-	1	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9	
	(7 wi:	h 727 D)								
	880	68,0 - 70,0	920 - 930*	-	, -	100	ca. 11,9			
				070		970-	985= 4 mm	RW		
				970-9	985 4,0 mm RW					

Checking values in brackets

Testoil-ISO 4113

± 1,0

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever	tion travel			liate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To rev/min 10	rque control Control rod travel mm
20										

C. Settings for Fuel Injection Pump with Fitted Governor

	li-load stop emp. 40°C (104°F)	Rotational- speed limitat.	30 Fu	el delivery aracteristics	Starting f	uel delivery 5	Idle stop		
rev/min	cm³/1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rey/min	travel mm 9	
	:								
			424						

Checking values in brackets En

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps ② and Governors

40

VDT-WPP 001/4 DAI 8,0 b Edition 9.67

En

PE 6 A 90 C 410 RS 2124

RQ 300/1175 AB 599 DL RQ 300/1325 AB 600 DL ./. RQ 300/1325 AB 658 DL ./.*

company engine:

supersedes

Daimler-Benz OM 327

(160 PS) (170 PS)*

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery: cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
	9	6,4 - 6,9	0,4			
1000	6 15	2,9 - 3,8 13,8 -15,3				1
200	6	0,2 - 1,0				
	L					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ 300/1175 AB 599 DL

1 -				cifications (4)	Idle speed regulation Setting point Test specifications 5				Torque control				
re	ev/min	travel		rev/min	rod travel	Control rod travel mm	rev/min	rev/min	rod travel	rev/min	travel	rev/min	Control rod travel mm
	1100	14,7-15,	,3	1100	15,0	1175 1220 1250 1300 1380	14,8-15,0 9,8-13,5 6,0-11,5 0 - 7,2	550	0	200 300 400 450	6,8-8,1 4,4-6,5 0,5-2,8	650	15,9-16,0 15,0-15,2
		At	n	= 120	gov	ernor	must break	away	by (.5-1.	0 mm from	full	load!

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics	Starting f	d 6		
rev/min	cm³/-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes	rev/min	Control red travel cm³/1000 strokes:/ mm		
1150	79,5-81,5 (79,0-82,0)	450	1000 800 500	78,0 - 81,0 77,5 - 81,5 71,0 - 75,0	100	ca. 16 mm RW		

Checking values in brackets

318

BOSCH

Geschaftsbereich KH. Kundendlenst, Kfz-Ausrüstung.

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Testoil-ISO 41

Checking PRG che	g of slider	Full-load	•	•	cifications (4)		Idle speed regulation Setting point Test specifications (5)			Torque control		
rev/min	Control rod travel mm 2	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min	Control rod travel mm 8	rev/min	Control rod travel mm	rev/min	travel	
600	15,7-16,3	600	16,0	1330 1380 1440 1530	0 - 8,6		0	300	4,2-6,6 0,4-3,2		15,8-16,0 15,3-15,6 14,9-15,1	
						t p	:		•			

Torque-control travel on flyweight assembly dimension a

0,35 _{mm}

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co Test oil tem		2	Control rod stop	(3a)	Fuel delivi	ery characteristics	3 b	Starting I		ery	6 Control
rev/min 1	cm ³ /-1000 stroke 2	?S	rev/min 3		rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	cm ³ /100	00 strakes	rod travel
1300	75,5 - (75,0 -		450		1000 700 500	73,0 - 76, (72,5 - 76, 74,0 - 78, (73,5 - 78, 68,0 - 72, (67,0 - 72,	5) 0 5) 0	100	ca.	16 mm	RW
** At	n = 1350	govern	or must brea	ak a	way by	0.5-1.0 mm f	rom	full	load!	Appendix 1. A dent v 60 H	

Checking values in brackets

B. Governor Settings

RQ 300/1325 AB 658 DL

Checkin	g of slider	Full-load s	peed reg	gulation	_	idle spe	ed regula	stron		Torque c	ontrol	ĺ
PRG che	ck 1	Setting po	int	Test spec	cifications (4)	Setting p	oint	Test spe	cifications (5)		(3)	
rev/min	Control rod travel mm 2		Control rod travel rom 4	Control rod travel rom 5	rev/min	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm	i .	travel	
600	15,7-16,3	600	16,0		14,3-14,7 10,4-14,0 6,4-11,8 0 - 7,8	560	1	200 300 400 460	6,7-8,1 4,3-6,7 0,6-3,2 0	900	15,8-16,0 15,1-15,4 14,7-14,9	
			0.4									1

Torque-control travel on flyweight assembly dimension a

m ** Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np 40°C (104°F)	Control rod stop	Fuel delive	ery characteristics 3b	Starting fill lidle spee		6 Control
rev/min	cm ³ /- 1000 strokes 2	rev/min	rev/min	cm ³ /~1000 strokes	rev/min	cm ₹1000 strokes / i	rod travel
1300	74,0 - 76,0 (73,5 - 76,5)	450	900 700 450	69,5 - 72,5 (69,0 - 73,0) 71,5 - 75,5 (71,0 - 76,0) 66,5 - 70,5 (66,0 - 71,0)	100	ca. 16 mm R	₹₩ .

En Checking values in brackets

Test Specifications Fuel Injection Pumps (A) and Governors

40

DAI 8,7 b
Edition 3.66

En

PES 6 A 90 C 410 RS 2173

EP/RSV 300-1000 A 4 B 460 DL EP/RSV 300-1000 A 4 B 373 L supersedes

company engine

Daimler-Benz MB 856) MB 866)(120PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm\$100 strokes 3	Spring pre tensioning (torque control valve) mm 6
1000	9	5,9 - 6,4	0,4			
200	6 15 9	2,7 - 3,5 13,3 -14,3 3,1 - 4,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV 300-1000 A 4 B 460 DL

1 Uppe	r rated speed	l rev/min	Intermed	hate rated	speed	4	Lower	rated speed	(3) To	rque control
Degree of	Control rod travel	Control rod travel				Control-		Control rod travel		Control rod travel
deflection of control lever	mm	mm rev/min				lever deflection in degrees	rev/min	mm	rev/min	mm
I	2	3	4	5	6	7	8	9	10	11
ca.62	1000	16,0				ca.27	300	6	980	0
	1050 1090	10,8 5,0	spri	out au ng	X 1 I 1a	ry	100 300	19 - 21 5,7-6,3	800	0,6-0,8
28	1070 1120 1220	5,2-9,5 2,1-4,2 0 - 1	with spri	auxil ng	iary		400 600	3,0-4,5	500	1,3-1,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

20	Speed			iel delivery paracteristics	Starting tidle	uel delivery 5	4a) Idle stop		
Test oil te rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note. changed to) rev/min 3	rev/min	cm\1000 strokes	rev/min	cm\$1000 strokes	rev/min	Control rod travel mm	
980	70,0-72,0	1010-1030	700 500	81,5 - 84,5 78,5 - 81,5	100	20 mm RW	300	6	
								./.	

Checking values in brackets



Geschaftsbereich KH. Kundendienst. Kfz. Ausrustung. c. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d. Allemagne par Robert Bosch GmbH.

estoil-ISO 41

^{* 1} mm less control rod travel than col 2

B. Governor Settings

EP/RSV 300-1000 A 4 B 373 L

	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7	- Lower rev/min 8	rated speed Control rod travel mm	11 9 1	rque control Control rod travel mm
ca.62	1000 1040 1080 1080 1120 1200	16 11,7 6,1 4 - 8 1,4-3,7 0 - 1	spri	auxil		ca.27 'y	300 100 300 380 500	6 19 - 21 5,7-6,3 2,5-3,5 0 - 1	980 500 350	0 0 1,0-1,6

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	6 Rotational- speed limitat.		el delivery paracteristics	Starting t	fuel delivery 5	4a Idle stop	
Test oil to	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm 9
980	71,5 - 73,5	1010-1030		· **.	100	21 mm RW	300	6
							·	

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed	Control- lever deflection in degrees 7	rev/min	rated speed Control red travel mm	rev/min	rque control Control rod travel mm † 1
②										

C. Settings for Fuel Injection Pump with Fitted Governor

U	ill-load stop	Rotational- speed limitat.	(3a) Fu	el delivery aracteristics	Starting f	uel delivery 5	4a Idio	stop
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ⁻ /1000 strokes 7	rev/min 8	Control rod travel mm 9

VDT-WPP 001/4 STE 6,0 d 2. Edition

PE 6 A 85 C 412 RS	2182 RQ 250/	/1400 AB671D (1) supersede	es 10.69
	2182 RQ 250/	, , , = - , ,	2) company	Steyr
(D) RS		, , , , , , , , , , , , , , , , , , , ,	3)	WD 610 r (120PS-1)
PE 6 A 80 C 412 RS			4)	WD 610.23(120PS-2)
RS		. ,	5)	WD 610.19 (132PS-3)
See page 3! RS	2261 RQV 250/	/1400 AB759D (
				WD 609 e (150PS-4.5)
All test specifications are valid to	or Bosch Fuel Injection P	ump Test Benches and Te		WD 609.60(170PS-6)
A Fuel Injection	D. man Catti	inas		WD 003.00(17013 07

A. Fuel Injection Pump Settings

Port closing at prestroke

Festoil-ISO 4113

2,5 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery "C"8 u. 8,5 cm³/100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery D 8,5 cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	9	4,1 - 4,5	0,3	9	5,5 - 6,0	
1000 200	6 15 9	1,2 - 2,0 10,3 -11,4 2,9 - 3,7		6	2,3 - 3,1	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ .. AB671D (1)

PRG che	Control rod	D	Full-load s Setting po rev/min 3			cifications 4	Idle spee Setting p rev/min 7	Control rod travel	Test spe	cifications 5 Control rod travel mm 10	Torque o	Control rod (3)
1350	12,5-13,	1	1350	12,8	1420 1450 1500 1580	12,4-12,8 8,0-12,6 0 - 8,0 0		0	100 200 300 410	6,3-8,1 4,8-6,8 2,3-4,5 0	900	15,8-16,0 14,7-15,0 12,2-12,5

Torque-control travel

Speed regulation: At

1 mm less control and travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop	Fuel deliv	ery characteristics	Starting fi	Control	
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	red travel cm ³ /1000 strokes:/ mm 7	
1380	45,0 - 47,0	500	900 500	52,0 - 55,0 50,0 - 53,0	100	ca. 12 mm RW	

Checking values in brackets

12.72

RQ..

STE 6,0 d S 2

Checkin	g of slider	Full-load	speed re	gulation		idle spe	ed regula	ation		Torque control		
PRG che	ck (1)	Setting po	oint	Test spe	cifications 4) Setting (point	Test spe	cifications (5)		(3)	
rev/min	Control rod travel nm 2	rev/min	Control rod travel mm 4	Control rod travel mm 5	rev/min	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min	Control rod travel mm	
	15.7-16.3 kaway not re 1420	550	16,0	1450 1500 1580	13,4-13,8 8,0-12,5 0 - 8,0		0	100 200 300 410	6,3-8,1 4,9-6,9 2,4-4,5	1000	15,8-16,0 15,1-15,4 14,1-14,4	
RQA	B737S (3)	Tor	que-c	ontro	travel a	=0,3	mm					
550	15,7-16,3	550	16,0	1400 1450	14,5-15, 7,5-12,	1	0	100 200	6,2-8,1 4,7-6,8		15,8-16,0 15,4-15,6	

Torque-control travel on flyweight assembly dimension a

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

		elivery on ontrol lever np 40°C (104 F)	Control rod stop 3a	Fuel deliv	ery characteristics	3Ъ)	Starting flale spee		6 Contrai
	rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes		rev/min		rod travel
withou with	t1380 1380	52,5 - 54,5 46,0 - 49,0	500	1000	58,5-61,5 51,5-54,5		100	ca. 13 mm F	RW
withou with	t1380 1380	68,0 - 70,0 62,5 - 65,5	500	1000	64,5-67,5 56,0-59,0		100	ca. 15 mm F	RW
	1400	0,4 kp/cm ² 73,5 - 75,5		800	0,4 kp/cm ² 78,0-81,0		100	ca. 20 mm F	RW
	1400	70,5 - 73,5	(with cap!)	500	0 kp/cm ² 47,0-50,0		1 1 1		

Checking values in brackets

B. Governor Settings

RQ .. AB7C4D (4)

Checkin	g of slider	Full-load	speed re	gulation			_	idle spe	ed regula	ation	_	Torque o	control
PRG che	eck (1)	Setting p	oint	Test spe	cifica	tions	(4)	Setting p	point	Test spe	citications (5)		(3)
rev/min	Control rod travel	rev/min	Control rod travel mm	Control rod travel	, : rev/	min		rev/min	Control rod travel mm	rev/min	Control rod travel	; rev/min	Control rod travel
1	2	3	.4	5	6			7	8	9	10	11	12
550	15,7-16,3	550	16,0	1500 1580 1400 1450 1500 1500 1580	1		8 -14,4 -12,7 - 7,9 - 2,8		0	410 100 200	2,0-4,4 0 6,2-8,1 4,8-6,8 2,0-4,4	950 1100 900 1000 1200	15,0-15,2 15,9-16,0 15,5-15,8 14,6-14,9

Torque Control travel on flyweight assembly dimension a

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104 F)	Control rod stop 3a	Fuel deliv	ery characteristics	3 b)	Starting filled spee	uel delivery d Control
rev/min I	cm ³ /-1000 strokes 2	rev/min	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	red tri cm ³ /1000 strokes / mm 7
,							
Checking v	values in brackets		<u> </u>		·		

Upper rated	speed			Intermediate	rated spe	ed	1	Lower rated	speed		Sliding si	eeve travel
Degree of deflection of control lever		Control rod travel mm rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm (4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mim
ca.65	1400 1440 1520 1600 1660	15,0-1 11,6-1 4,4- 0 - 6	5,0	-	-	-		ca.10	150 250 500 700 950		681 D 1000 600 759 D 1000 600	0 1,0-1,2

Torque control travel a = 1,1

mm (681D); 1,3 (759D)

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	stop	Rotational-speed (2b) limitation intermediate speed	Fuel deliningh idle :	rery characteristics 5a speed 5b	Starting Idle switchir	_	Torque- travel	Control roo
rev/min	cm \$1000 strokes	rev/min 4a	rev/min	cm ² /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
1	2	3	14	5	Ь	/	3	9
1400	0,4 kp/cm ² 73,5-75,5		800	0,4 kp/cm ² 78,0-81,0 0,1 kp/cm ²		ca.20mmRW ge-over point 190 U/min		
1400	0,6 kp/cm ²	•	500	47,0-50,0 0,6 kp/cm ²	230-	1 30 0/11111		
	82,0-84,0		800	93,0-96,0 0 kp/cm ²				
		<u> </u>	1500	47.0-50.0				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Setting of smoke limiter:

- 1. Basic setting of pump (section A) and governor (section B) without smoke limiter.
- 2. Set full-load delivery (delivery data <u>with</u> charge-air pressure) at full-load stop screw of <u>governor</u>; check fuel-delivery characteristics.
- 3. Attach smoke limiter.
- 4. Set start and end of adjustment at guide sleeve (spring seat) of diaphragm housing $-n=500\,\text{min}^{-1}$: RQ..704D, RQV..759D Start $-\text{kp/cm}^2$: 0.08-0.11 0.05 End $-\text{kp/cm}^2$: 0.23-0.26 0.48-0.50 Difference -mm CRT approx. 2.0 approx. 3.4
- 5. Set full-load delivery at 0 kp/cm² at bell crank of smoke limiter.
- 6. Correct full-load delivery -0.5 ccm at maximum control-rod travel and with corresponding speed of fuel-delivery characteristics using hexagon bolt of housing in smoke limiter, max. charge-air pressure; measure fuel-delivery characteristics with increasing speeds.
- 7. Test automatic control-rod stop (RQV switching point)
- 8. Additional final measurement (with running-in cap RQ only).

In the case of governor with no smoke limiter:

"without" = without running-in cap
"with" = with running-in cap

Test Specifications Fuel Injection Pumps and Governors

40

MB 1,7 i 1 Edition 12.71

	<u> </u>		
PES 4 A 50 B 410 RS 50, Z	EP/M 60 A 102D	supersedes	DAI 1,7i1
RS 68, Z, (c) RS1010,Z,		company	3.64
(D) RS1026	102D,126D	engine	Daimler-Benz
RS1097	102D		OM 636 VI U
RS1142	126D		

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ⁴ /100 strokes 3	Difference cm ¹ / 100 strokes 4	Control rod travel mm 5	Fuel delivery cm ¹ /100 strokes 6	Spring pre-tensioning (torque-control valve) mm 7
	12	2,2 - 2,7	0,2		1,9 - 2,3	
1000	9 18	0,8 - 1,4 4,5 - 5,2			0,7 - 1,2	
200	9	0,6 - 1,1			0,4 - 1,0	

Adjust the fuel delivery from each outlet according to the values in ____

B. Governor Settings

	Leakage Control-rod travel limitation breakaway*		Control	Control rod travel test		spring cam**	Torque c	ontroi		
Torque control travel	Vacuum pressure drop			Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travei
mm	mm water col	s	mmwc	mm	mmwc	mm	mm w c	mm	mmwc	mm
1	2	3	4	5	6	7	8	9	10	11
1,0+0,1	500-480	10	300	12,3	-	-	430 500 700	12,3 8,3-11,6 1,5- 4,0	40 75 125	13,3-13,4 12,9-13,3 12,3-12,7
= rotational sp adjust breakay	vel test (cols. 4- ⊭eed 500 rev/mii way (cols. 4-5) l int (B 8-9 - C 7-	n by mean								

C. Settings for Fuel Injection Pump with Fitted Governor

	Full-load s Test oil tei rev/min	top screw mp. 40°C (104° Vacuum mm wat col	F) cm ³ /1000 strokes	Fuel deliv	Vacuum mm wat col	cm³/1000 strokes	idle (stop idle (imb	Control road travel from full-load to idle mm cm ³ /1000 strokes
RS 50 RS1010 RS1097	I.	300	28,2 - 29,2	750 500	125 50	28,7 - 30,7 30,7 - 32,7		8
						·		•/•

Checking values in brackets

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung © 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

C. Settings for Fuel Injection Pump with Fitted Governor

engine power Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed limitation	Fuel deliv	very characteristics	Starting Idle switchin	fuel delivery	Intermediate rotational speed Torque-control travel		
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	lww	
1	2	3	4	5	6	7	8	ļ	
RS50Z,	RS68, RS101	0X	•						
1000	300	23,7 - 24,7	750	125	24,2	- 26,2			
			500	50	26,2	- 28,2			
RS68Z,	RS1010Z, RS1	026, RS1142			· · · · · · · · · · · · · · · · · · ·				
1000	300	27,2 - 28,2	750	125	27,7	- 29,7			
			500	50	29,7	- 31,7			
RS68Y,	RS1010Y								
RS68Y,	RS1010Y 300	25,2 - 26,2	750	125	25,7	- 27,7			
		25,2 - 26,2	750 500	125 50	-	- 27,7 - 29,7			
	300	25,2 - 26,2			-	•		- P - P - P - P	
1000	300	25,2 - 26,2			27,7	•			

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 DAI 1,8 i 2. Edition

En

PES 4 A 50 B 410 RS 50 RS 68.Z EP/RSV 250-950 A 4/15

A 4 A 60

A 4 B 60 -1025 A 4 B 196 L supersedes 2.64

company Daimler-Benz

engine OM 636

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

RS 1010, Z,Y,X

A. Fuel Injection Pump Settings

Port closing at prestroke

1.7 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	2,2-2,7	0,3			
	9 18	0,8-1,4 4,5-5,2				
200	9	0,6-1,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250-950

Upper rated s	peed		Intermediate	rated sp	ed	Lower rated	speed	•	Sliding s	leeve travel
deflection	rev/min Control	Control rod (a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
of control lever	rod travel	mm rev/min (2a)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.57	950	16				ca.24	250	6	930	0
	1000	10	withou	t aux	liary		100	19-21	420	0
İ	1050	2	spring		•		250	5,7-6,3	300	1,2-1,8
	1000	8-11					340	1,8-3,8		
	1040	2,6-6	with a	uxilia	ry		380	0 - 2,6		
İ	1080	0 -2,5	spring				450	0		
	1150	0 - 1				(3a)				

Torque controi travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/1000 strokes rev/min rev	speed (2b) Fuel delivery characteristics (5a) Starting fuel delivery high idle speed (5b)	Torque-control (5)
930 28,2-29,2 960-980 RS 1010, RS 50 930 23,7-24,7 960-980 RS 1010 Y, RS 68	rev/min cm³/1000 strokes rev/min cm³/1000 str	Control rod travel . mm
930 27,2-28,2 960-970 RS 1010 Z, RS 68 Z 930 22,7-23,7 960-970 RS 1010 X	80 RS 1010 Y, RS 68 Z 70 RS 1010 Z, RS 68 Z	

Checking values in brackets

* 1 mm less control rod travel than col. 2

3.65

250-1025

Degree of deflection of control lever 1	r rated speed Control rod travel mm		Intermed	liate rated	_	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm 11
ca.64		16 12,4 6,6 7,8-10,4 3,4-6,6 0 - 1	spri	auxi		ca.26 ry	250 100 250 300 340 450	6 19-21 5,7-6,3 3,9-4,9 1,5-3,7 0 - 1	1000 400 300	0 0 1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting t	ing fuel delivery 5 4a Idle sto		
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control ro travel mm 9
RS 1019	27,7-28,7	1030-1040						

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

Testoil-ISO 4113

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

En

①

Test Specifications Fuel Injection Pumps (1) and Governors

VDT-WPP 001/4 SAM 2,8 a 2,8b Edition 9.64

En

3

PES	1	A 8	0 B	310/3	S	28,	258	ROV	200-500	Α	53.	111	supersedes	12.52
	2			·			259	•					company	Samofa
	3					61							engine	2 S 108
														3 Q108

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

mm (from BDC)

		2,10 : 0,1				
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	9	3,7 - 4,1	0,3			
	6 15	0,3 - 0,9 10,1 -11,2				
200	9	2,9 - 3,7				

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 41

B. Governor Settings

Upper rated s	i l	1		Intermediate	rated spe	eed	Lower rated	speed		Sliding sleeve travel	
deflection	rev/min Control	Control rod travei	(1a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1
	rod travel mm	rev/min	(28)	of control lever	rev/min		of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
66 <u>+</u> 1,5	500 520 560 590	16,5-19 10 -15 0 - 6 0					10 <u>+</u> 1,5	100 200 300 380	6,8-8,8 4,6-7 2,1-3,8 0		•
							(3a)				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil ten	elivery d stop np. 40°C (104°F) 2 cm³/1000 strokes	Rotational-speed (2b) ilmitation intermediate speed rev/min (4a)	Fuel delivingh idle s	very characteristics 5a peed 5b cm³/1000 strokes	idle switchin		Torque- travel	Control 5 Control rod travel
1	2	3	4	5	6	7	8	9
480	72,5 - 74,5	500 - 520						

Checking values in brackets

Test Specifications Fuel Injection Pumps (1A) and Governors

VDT-WPP 001/4 SAM 2,8 b Edition 9.64

En

PES 1 A 80 B 310/3S299,533 300,534,1086

 $supersed \varepsilon s$ EP/RSV 200-750 A 7/25 28,A382company

9.59 Samofa S 108

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

2,15 + 0,1

(533)

engine

A. Fuel Injection Pump Settings

(534)

Port closing at prestroke

mm (from BDC)

2,7+0,1 (1086)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
600	9	3,7 - 4,1	0,3			
	6 15	0,3 - 0,9 10,1 -11,2				
200	9	2,9 - 3,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	rated speed Control rod travel mm		Interme	diate rate	d speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	1 3	rque control Control rod travel mm
ca.48	750 790 830	16 10 2,5	with spri		xiliar	ca.21 y	200 100 200	6 19 - 21 5.7-6.3	730 390 250	0 0 1,2-1,8
23	800 830 880 900	6,5-9,5 2,8-4 0 - 2 0 - 1	with spri	auxil ng	iary		300 330 400	19 - 21 5,7-6,3 1,6-3,8 0 - 3 0 - 1	250	1,2 1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	II-load stop	6 Rotational- speed limitat		iel delivery naracteristics	Starting (fuel delivery 5	(4a) Idl	e stop	
rev/min	cm ³ /1000 strokes	Note changed to) rev/min	rev/min	cm¥1000 strokes	rev/min	cm \$1000 strokes	rev/min	Control rod travel mm	
730	74,5-76,5	760 - 770							

Checking values in brackets

* 1 mm less control rod travel than col 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 DAI 4,6a4 (4,6a 5)

Edition 3.64

PES 6 A 70 B 410 RS 64

RQV 250/900/1400 A 186

8.59 supersedes

Daimler Benz company: OM 312

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.9 + 0.1

ntm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strakes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,5 - 7,0	0,3			
	6 18	1,2 - 1,9 11,1 -11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	eed		Lower rated	speed			Sliding	leeve travel
	rev/min Control rod travel	Control rod	(1a)	Degree of deflection of control		Contro travel	l rod	Degree of deflection of control		Control rod travel	١	Shuming S	1
lever	mm	rev/min	(2 B)	lever	rev/min	mm	4	lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6		7	8	9		10	11
65 <u>+</u> 1,5	1400 1440 1480 1520 1600	9,6- 1	18 14 11	52±1,5	900 950 1050 1300 1420	8 3	1-15,4 -13,4 - 3,4 - 3,4	10+1,5	150 250 350 600 750 870	6 - 8 4,4-6, 3,6-4, 3,6-4 1 -3,	6		
								<u>3a</u>					

Torque control travel a =

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 2b limitation intermediate speed				fuel delivery 6	Torque- travel	control 5
rev/min 1	cm³/1000 strokes .	rev/min 49	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min	travel mm 9
1000	43,5-45,5	1405-1420			100	mind.7,9	900	

Checking values in brackets

Testoil-ISO 411

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 DAI 4,6 a 3 Edition 3.64

Er

PES 6 A 70 B 410 RS 64 RS 64 z RQ 250/1450 A 19 D /1325 AA 19 D supersedes company:

5.63 Daimler-Benz OM 312

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6.5 - 7,0	0,4			
	6 18	1,2 - 1,9 11,1 -11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ 250/1450 A 19 D

Checkin PRG che	g of slider ck 1	Full-load	•	•	cifications (4)	ldle spec Setting p	-		cifications (5)	Forque control Control rod		
rev/min	travel	rev/min 3	rod travel mm	rod travel mm 5	rev/min 6	rev/min 7	rod travel	l .	Control rod travel mm	rev/min 11	travel mm	
1000	14 - 14,	1000	14,4	1460 1480 1500 1520 1580	14,2-14,4 8,5-14,4 3 -12 0 - 9 0			200 250 300 380 440			15,8- 21 15,2-15,7 14,6-14,9 14,4-14,5	

Torque-control travel on flyweight assembly dimension a =

nır

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting for	uel delivery d
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min 6	Control rod travel cm ³ /1000 strokes:/ mm
1000	45,5 - 47,5	500	500 700 1430	45,5 - 49,5 46,5 - 49,5 46,5 - 48,5	100	mind. 7,9
						./.

Checking values in brackets



Testoil-ISO 4113

B. Governor Settings

RQ 250/1325 AA 19 D

Checking PRG che rev/min 1	Control rod travel	Full load : Setting po rev/min 3	-	_	rev/min	Idle spec Setting p rev/min 7	Control Foot travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
1250	13,9-14,7	1250	14,4	1320 1350 1380 1440	14 - 14,4 7 - 14 0 - 9,5 0			150 250 360 410	5,8- 8 3,8- 6 0 - 2,4	650	15,4-15,8 14,8-15,3 14,4-14,6

Torque-control travel on flyweight assembly dimension a

0,5

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104 F)	Control rod stop 3a	Fuel deli	very characteristics	3 b	Starting I	Control
rev/min 1	cm ³ /-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes		rev/min	rod travel cm ³ /1000 strokes / mm 7
1000	45,5 - 47,5	500	500 700 1325	45,5 - 49,5 46,5 - 49,5 46,0 - 49,0			•
		;	:	; ;			
			:				

Checking values in brackets

B. Governor Settings

Checkin	g of slider ck	_	Full load Setting po			cifications	(4)	Idle spec			cifications (5)	Torque c	(3
ŀ	Control rod travel mm	··	rev/min	Control rod travel mm	rod travel	rev/min		rev/min	Control rod travel mm 8	rev/min	Control rod travel mm	rev/min	Control rod travel mm 12
				• · · · · · · · · · · · · · · · · · · ·	<u>+</u>								
			:	•								5	
			!!!!										

Torque-control travel on flyweight assembly dimension a

Speed regulation At

RQ 250/1450 A $^{1\,\text{mm}\,\text{less control}}_{19}$ Drod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	Full-load de governor c Test oil ten	elivery on ontrol lever ap 40°C (104 F)	Control rod stop 3a	Fuel delive	ery characteristics	3 b	Starting for	Control
	rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm³/-1000 strokes 5		rev/min 6	cm ³ /1000 strokes / mm
	RS64z		!					
	1000	30,5 - 31,5	500	500 700 1430	30,0 - 33,0 31,0 - 33,0 31,0 - 33,0		100 1	mind. 7,9
			:				1	1
En	Checking v	alues in brackets	· <u>·</u>	<u> </u>			i	

restoil-ISO 41

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 Edition 20.11.70

PES 8 A 75 C 320 RS 2286

RQV 300-800/1500 AB769, 770,771

supersedes

company: engine:

IHC DV 550 B

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1500	10,0	6,2-6,5	÷			
1500	ca.6,5	max.3,1 0,1-1,4	(Cyl.1-4- (Cyl.2-3-	6-7) 5-8)		
300	ca.7,0	min.2,5 0,1-0,4	(Cyl.1-4- (Cyl.2-3-	6-7) 5-8)		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

RQV ... 769, 770, 771

Upper rated	speed		intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm cev/min 28	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3 9	rev/min	1) mm 11
ca.63	1620 1700 1800 1900	13,8-16,6 7,3-11,8 0 - 5,0 0	ca.41	900	8,4-11,4 5,3- 5,7 5,3-5,7 0	ca.10	200 350 500 680	6,0-8,0 3,6-5,0 2,0-3,2 0		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

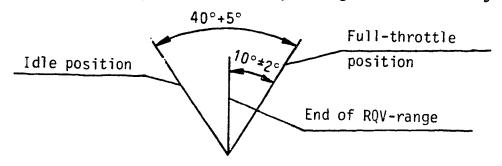
Full-load de Control-roo Test oil ten		Ilmitation intermediate speed	Fuel delivery characteristics (5a high idle speed (5b)		Starting Idle switchir		Torque- travel	Control cod
rev/min	cm ³ /1000 strokes	rev/min 🐠	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
	63,5-66,5 ,0 mm)	1540: 0,1mm- 1625:2,5-3,5 mmRW ***		58,5-61,5	100	8,1-10,4 **	le	vernor ss than lumn 2
180PS-	** 769)	1540:0,1mm- 1625:2,5-3,5 mm RW ***	700	54,5-57,5	100	8,1-10,4		

Checking values in brackets

The special operating conditions result in the following special governor setting: (governor 769, 770, 771):

- Calibrate slider, measure sliding-sleeve travel and calibrate plate cam in accordance with WPP 001/4 3rd Supplement, illustrations 5 ... 8.
 (With picture 5, use is to be made of device as per Fig. 22!)
- 2. Fit governor cover, attach protractor and control-rod-travel measuring device.
- 3. Check average rated speed as well as high and low rated speed. Provisionally set engine-speed limitation (Section C, Column 3).

It is to be noted that the control-lever travel from the idle position to full-load speed regulation is $40^{\circ} + 5^{\circ}$ and $10 \pm 2^{\circ}$ from the end of the RQV range to full-load speed regulation (see diagram).



Correct in accordance with Figs. 5-6 and 8 if the above figures are not obtained!

- 4. Set full-load control-rod travel and delivery; measure fuel-delivery characteristics.
- 5. Set engine-speed limitation, measure starting delivery and idle.

Sliding-sleeve	min ⁻¹	mm CRT
travel	0 - 200	Start
	400	2.2-2.8
	900	7.4-7.6
	1500	7.4-7.6
	1800-1900	End (11mm)

Test Specifications Fuel Injection Pumps (A) and Governors

40

VDT-WPP 001/4 MB 1,8r 1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes	mm	cm ⁹ /100 strokes	mm
1	2	3	4	2	3	6
1000	12	2,2 - 2,7	0,2			
•	9 18	0,8 - 1,4 4,5 - 5,2				
200	9	0,6 - 1,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

650 - 1200 A5B453 (1)

	r rated speed Control rod travel mm 2		Intermed	diate rated	speed	Control lever deflection in degrees 7		rated speed Control rod travel mm		rque control Control rod travel mm
ca.51	1200 1240 1280	16,0 12,2 7,6	withous spring	out au: ng	xiliaı	y ca.29	650 150 650	7,5 19,0-21,0		0
2 8	1250 1350 1550	10,0-12,0 3,8-4,8 0,3-1,0	with auxiliary spring				750 1000	7,2 - 7,8 4,0 - 5,5 0 - 1,0	400	1,4-2,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104 F)	Rotational- speed limitat		iel delivery aracteristics	uel delivery 5	lel delivery (5) (4a) idle stop		
rev/min	cm ⁹ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min 6	cm¶1000 strokes 7	rev/min 8	travel mm 9
(1) 1180	24,7-25,7 (24,2-26,2)	1200*				•		

Checking values in brackets

0,2-0,5 * 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of German, Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

11 1 1 1 1	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.51	1200 1250 1300	16,0 11,2 5,6		out au na	xilia	ca.29 ry	650 100	6,0 19 - 21	1180 600	0
2a	1270 1350 1500	7,0-10,0 2,8- 4,7 0,3- 1	spring with auxiliary spring				650 700 900	5,7-6,3 4,0-5,0 0 - 1	400	1,4-2,0

C. Settings for Fuel Injection Pump with Fitted Governor

II-load stop				Starting f	fuel delivery 5	idle stop		
cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
25,2 - 26,2	1200*							
	mp. 40°C (104°F) cm³/1000 strokes 2	mp. 40°C (104°F) cm³/1000 strokes 2 speed limitat. Note: changed to) rev/min 3	mp. 40°C (104°F) cm³/1000 strokes 2 speed limitat. Note: changed to) rev/min 3 rev/min 4	mp. 40°C (104°F) cm³/1000 strokes 2 speed limitat. Note: changed to) rev/min rev/min 3 rev/min 5 cm³/1000 strokes 5	mp. 40°C (104°F) cm³/1000 strokes 2 speed limitat. Characteristics rev/min rev/min rev/min fev/min speed limitat. Note: changed to) rev/min 2 speed limitat. Note: changed to) rev/min 3 characteristics Idle rev/min cm³/1000 strokes 7	mp. 40°C (104°F) cm³/1000 strokes 2 Speed limitat. Characteristics idle characteristics rev/min cm³/1000 strokes rev/min cm³/1000 strokes 7 cm³/1000 strokes rev/min 6 7		

Checking values in brackets

Testoil-ISO 4113

0,2-0,6 * 1 mm less control rod travel than col. 2

B. Governor Settings

650-900 A7B510 (3)

1 Uppe	r rated speed	rev/min	Interm	Intermediate rated speed			Lower rated speed			3 Torque control		
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm		
ca.48	900	16,0		ha	37 3 4 4	ca.34	650	7,5	880	0		
	910 925	12,4 6,6	spr	hout au ing	IX II Id	У	100	19,0-21,0		0,7-0,9		
20	915 950 1050	8,8-11,5 4,4-5,5 0,3-1,0		h auxil ing	liary		650 725 925	7,2- 7,8 2,9- 4,9 0 - 1,0				

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop	
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min	Control rod travel mm 9
(3) 880	30,7 - 31,7	910						·

Checking values in brackets **En**

650-1200 A5 B729L (4)

Degree of deflection	r rated speed Control rod travel mm					in degrees		rated speed Control rod travel mm		rque control Control rod travel mm 11
ca.52	1200 1250 1290	16,0 11,7 7,5	witho sprin	ut aux	(il iar	ca.27	650 250 650	7,3 19 - 21 7,0-7,6	1180	
ca . 51	1200 1280 1400	ca.13,5 ca. 7,0 0,3-1,0	with auxiliary spring				750 750 860	1,8-4,3	400	0,9-1,5

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop	Rotational- speed limitat.		el delivery aracteristics	Starting t	uel delivery 5	4a Idle stop		
	emp. 40°C (104°F) cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	
1180	29,2-30,2	1210-1220*					650	7,3	
		٧	1280-	1295: 7 mm RW					

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

11	r rated speed Control rod travel mm		Intermed	tiate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	rque control Control rod travel mm
		·							
20									

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop	6 Rotational-speed limitat. 38 Fuel delivery characteristics				Starting fuel delivery 5 4a Idle stop				
-	emp. 40°C (104°F) cm ³ /1000 strokes	Note: changed to) rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		Control rod travel mm		
1	2	3	4	5	6	7	8	9		
			1							
1										
							<u> </u>			

Checking values in bra

Checking values in brackets

^{* 1} mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (A) and Governors

8. Edition

VDT-WPP 001/4

En

PES 6 A 95 C 420 LS 3007

3024

EP/RSV 375-1000 A2 B515DR EP/RSV 375-1100 A2 B516DR,

599DR, 659DR, 688DR,695DR,697DR engine

company

supersed∈s

7.7.73 Case A 504 BDT

EP/RSV 375-1050 A2 B621DR

EP/RSV 375-875 A7 B696P

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.0 + 0.1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm³/100 strokes	100 strokes	mm	cm ^{\$} /100 strokes	mm
1	2	3	4	2	3	6
1000	9	8,4 - 9,0	0,4			
•	6 15	4,0 - 5,0 16,5 -17,8				
200	6	1,4 - 2,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV 375-1000 A2 B515DR

1 Uppe	r rated speed	rev/min	Interme	diate rated	t speed	(4)	Lowe	rated speed	3 Torque control		
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel	
of control lever	mm	mm rev/min				deflection in degrees	rev/min	mm	rey/min	.mm	
1	2	3	4	5	6	7	8	9	10	11	
ca.39	1020	9,8				ca.20	375		1000	0	
	1050 1090	7,0 3,0	sprir	out aux ng	xıııar	y	150 375	19 - 21 5,2-5,8	450	0,4-0,7	
23	1040 1100 1180	9,2-9,8 3,0-4,2 0,3-1,0	with sprin	auxil ng	iary		450 550	1,6-3,4			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	11301	iel delivery paracteristics	Starting I	luel delivery 5	4a Idle stop	
rev/min	emp 40°C (104°F) cm ² /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm\1000 strokes	rev/min	cm#1000 strokes	rev/min	Control rod travel mm 9
1000	102,5-104,5 (101,5-105,5)	1040	750 650 1100	107,5-111,5 (106,5-112,5) max. 110,0 (111,0) 10,5-17,5 (9,5-18,5)	100	13,5-14,5		18-22 /1000 •

Checking values in brackets

* 1 mm less control rod travel than col 2

12.74

estoil-ISO 4

Degree of deflection of control lever 1	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control- lever deflection in degrees 7	- Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm
ca.39	1120 1160 1190	10,8 5,8 2,5	with spri	out au ng	xilia	ca.18 y	375 150 375	5,7 19 - 21 5,4-6,0	1100	0
28	1140 1200 1260	10,4-11,2 3,0-4,5 0,3-1,0	with spri	auxil ng	iary		450 540	1,4-3,3	600	0,2-0,5

C. Settings for Fuel Injection Pump with Fitted Governor

2	ill-load stop	6 Rotational- speed limitat.		iel delivery naracteristics	Starting f	uel delivery 5	4a) Idle stop	
rev/min	emp. 40°C (104°F) cm²/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1100	113,5-115,5 (112,5-116,5)	1140-1155*	800 700	114,0-118,0 (113,0-119,0) max. 117,0	100	13,5-14,5 cm ³ /10		17-23
			1200	11,5-19,5 (10,5-20,5)				

Checking values in brackets

B. Governor Settings

EP/RSV 375-1050 A2 B621DR

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lowe rev/min 8	Control rod travel mm	rev/min	rque control Control rod travel mm 11
ca.38	1075 1150 1220	10,9 7,8 4,5		without auxiliar spring			375 150	5,6 19 - 21	1050	0
28	1090 1150 1220	10,4-11,2 2,6-4,0 0,3-1,0	with auxiliary spring				375 450 530	5,3-5,9 1,3-3,2 0 - 1	450	0,5-0,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational- speed limitat.	(3a) Fu	nel delivery paracteristics I	Starting f	uel delivery 5	4a Idle stop		
rev/min	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9	
1050	119,5-121,5 (118,5-122,5)	1090	750 660 1150	125,5-129,5 (124,5-130,5) max. 128,5	100	13,5-14,5	375 cm³/1	17-23 000	

Checking values in brackets

^{* 1} mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

EP/RSV 375-1100 A2 B659DR

		Intermediate rated speed			(4)	• Lowe	•	3 Torque control		
Control rod travel	Control rod travel				Control- lever	_	Control rod travel		Control rod travel	
mm 2	mm rev/min 3	4	5	6	deflection in degrees 7	rev/min 8	mm 9	rev/min 10	mm 11	
1120	11,4			•••	ca.19	375	5,9	1100	0	
1150	6,8 2,8		without auxilia spring			150 375	19 - 21 5,6-6,2	400	0,6-0,9	
1140 1200 1250	2,0-3,8	with		iary		450 540	1,8-3,6 0 - 1			
	Control rod travel mm 2 1120 1150 1180 1140 1200	mm mm rev/min 2 3 1120 11,4 1150 6,8 1180 2,8 1140 10,8-11,6 1200 2,0-3,8	Control rod travel mm mm rev/min 2 3 4 1120 11,4 1150 6,8 with 1180 2,8 spri 1140 10,8-11,6 1200 2,0-3,8 with	Control rod travel travel mm mm rev/min 2 3 4 5 1120 11,4 1150 6,8 without au spring 1140 10,8-11,6 1200 2,0-3,8 with auxil	Control rod travel travel mm mm rev/min 2 3 4 5 6 1120 11,4 1150 6,8 without auxilia spring 1140 10,8-11,6 1200 2,0-3,8 with auxiliary	Control rod Control rod travel mm rev/min 2 3 4 5 6 Control-lever deflection in degrees 7 1120 11,4 1150 6,8 1180 2,8 Spring 1140 10,8-11,6 1200 2,0-3,8 with auxiliary Control-lever deflection in degrees 7 Ca.19 Control-lever deflection in degrees 7 Control-lever deflection 7 Control-lev	Control rod travel Control rod travel mm rev/min 3	Control rod travel mm rev/min 2	Control rod travel mm rev/min 2 3 4 5 6 Control rod travel mm rev/min 2 3 4 5 6 Control rod travel mm rev/min in degrees 7 7 7 7 7 7 7 7 7 7	

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat.		nel delivery paracteristics	Starting fuel delivery (5) (4a) idle stop			
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm
1100	136,0-138,0 (135,0-139,0)	1140-1155*	750 650 1200	143,0-147,0 (142,0-148,0) max. 146,0 20,5 - 28,5 (19,5 - 29,5)	100	13,5-14,5	375	17 - 23

Checking values in brackets $\pm 1,0$ * 1 mm less control rod travel than col. 2

B. Governor Settings

EP/RSV 375-1100 A2 B688DR

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To rev/min 10	rque control Control rod travel mm
29	1120 1160 1190 1140 1200 1260	9,5 5,0 2,0 9,2-9,8 2,6-4,0 0 - 1	spri	auxil		ca.21	375 150 375 450 550	5,7 19 - 21 5,4-6,0 2,0-3,5 0 - 1	1100 500	0 0,1-0,4

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	nal- nitat 3a Fuel delivery characteristics			uel delivery 5	4a Idle stop		
Test oil to	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travei mm 9	
1100	94,5-96,5 (93,5-97,5)	1130-1145	800 700	93,5-97,5 (92,5-98,5) max. 96,0	100	13,5-14,5	375	17-23	
			1200	12,5-20,5 (11,5-21,5)					

Checking values in brackets En

+1,0

EP/RSV 375-1100 A 2 B695DR

(1) Uppe	er rated speed	l rev/min	Interm	ediate rated	speed	1(3)			(3) To	Torque control	
Degree of deflection	travel	Control rod travel				Control- lever		Control rod travel		Control rod travel	
of control lever	mm 2	mm rev/min	4	5	6	deffection in degrees 7	rev/min 8	mm 9	rev/min 10	mm 11	
ca.44	1120 1150	10,0 6,2	*	• • • •		ca.21	375	5,6			
	1180	2,6	1	without spring	auxı	lary	150 375	19 - 21 5,3-5,9	1100	0	
	1140 1200	9,2-10,2 2,4- 3,9	** ,	with au	xilia	rv	450 550	1,7-3,5	500	0,2-0,5	
28	1260	0,3-1,0	1	spring			330				

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	III-load stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting (uel delivery 5			
Test oil to rev/min 1	p. 40°C (104°F) m³/1000 strokes Note: changed to) rev/min 3		rev/min 4	cm³/1000 strokes 5	rev/min	cm ³ /1000 strakes	rev/min 8	Control rod travel mm	
1100	104,5-106,5 (103,5-107,5)	1140-1155*	750	105,0-109,0 (104,0-110,0)	100	13,5-14,5	375	17-23	
			650	max. 108,0					
			1200	9,5- 17,5 (8,5- 18,5)					

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

EP/RSV 375-875 A7 B696R

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	rev/min	rque control Control rod travel mm 11
ca.58	885 930 960	13,6 6,8 1,8	*			ca.30	375 150 375	8,0 19 - 21 7,7-8,3	875	0
29	930 960 1030	6,3-8,0 2,3-5,3 0,3-1,0	**				450 550	2,0-4,7 0 - 1	350	0,2-0,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational- speed limitat		el delivery aracteristics	Starting fidle	uel delivery 5	rev/min 8 9	
rev/min	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	mm
875	132,0-135,0 (131,0-136,0)	880-895	900 940	91,5-121,5 (90,5-122,5) 10,5- 18,5 (9,5- 19,5)	100	13,5-14,5	375	17-23

Checking values in brackets En

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

EP/RSV 375-1100 A2 B697DR

	r rated speed Control rod travel mm		Intermed	Intermediate rated speed 4 5 6			Lower rev/min 8	rated speed Control rod trawal mm	3 To	rque control Control rod travel mm
ca.42	1120 1140 1180	10,5 9,0 3,0		without auxiliar spring with auxiliary spring			375 150 375	5,7 19 - 21 5,4-6,0	1100	0
2a	1140 1200 1260	10,4-11,4 2,8-4,2 0,3-1,0	with				450 540	1,2-3,3	500	0,1-0,4

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load stop Test oil temp. 40°C (104°F)		Rotational- speed limitat		iel delivery aracteristics	Starting t	uel delivery 5	(4a) Idi	e stop
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
1100	125,5-127,5 (124,5-129,5)	1140-1155*	750 650 1200	126,5-130,5 (125,5-131,5) max. 130,5 20,5- 28,5 (19,5- 29,5)	100	13,5-14,5	375	17-23

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2	Intermed	late rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	rque control Control rod travel mm 11
				•				
20								

C. Settings for Fuel Injection Pump with Fitted Governor

	emp. 40°C (104°F)	Rotational- speed limitat.		nel delivery paracteristics	Starting f Idle	uel delivery 5	4a idi	Control rod
rev/min	cm³/1000 strokes	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min	travel mm 9
						//		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (1) and Governors

1. Edition

VDT-WPP 001/4

PE 6 A 90 D 320 RS 2412 PE 6 A 90 D 321 RS 2413 321	RQV 250-1100 AB861DR (1) RQ 250/1300 AB863DR (2)	supersedes company Ena sa 9135.30 (1)
PE 6 A 90 D 320 RS 2414	RQ 250/1200 AB862DR (3) 250/1300 (4)	9130 (2) 9135.02 (3)
See page 2!		9135.00 (4)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15+0,1 mm (from BDC)

Rotational speed rev/min	Control rod trave: mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control red travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,1 - 5,5	0,4			
	6	1,6 - 2,6				
200	9	1,9 - 2,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV .. 361 DR (1)

1	rev/min Control rod travel mm	Control rod (a travel mm rev/min 2a	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever	speed rev/min 8	Control rod travel mm 3	Stiding s rev/min 10	mm
ca.50	1135 1200 1280 1370	15,0-18,3 8,8-13,6 0 - 7,7 0		-	-	ca.13	120 250 350 480	8,8-11,0 5,9- 8,3 1,8- 4,4 0	1135	

Torque control travel a =

0,5mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter rev/min	d stop np. 40°C (104°F) 2	Rotational-speed 2b Ilmitation Intermediate speed rev/min 4a	Fuel delication from the second secon	cm³/1000 strokes	idle	switching point rev/min cm³/1000 strokes		control 5 Control rod travel mm
(1) 0,6	bar 86,5-88,5 (85,5-89,5)	1140-1155*	0,6 900 0 500	bar 89,0-92,0 (88,0-93,0) bar 54,0-58,0 (53,0-59,0)	100	mind.20mmRW		

Checking values in brackets

			, -			002 1	K (Z	u. 4)	•		
Checkin PRG che rev/min 1	Control rod travel	Full-load : Setting po rev/min 3	•	•	rev/min	Idle spec Setting p rev/min 7	Control rod travel		cofications 5 Control rod travel mm	Torque o	Control rod
550	15,7-16,3	550	16,0	1320 1350 1370 1450	_		0	100 200 300 400	6,2-8,1 4,7-6,8 2,0-4,4 0	600 700	

Torque-control travel on flyweight assembly dimension a

0,2 _{mm}

Speed regulation At 1340-1360=

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

governor	delivery on control lever mp 40°C (104 F)	Control rod stop	Fuel deliv	ery characteristics	Starting lidle spee	fuel delivery
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	cm ³ /1000 strokes/mm
ca.	10 mm RW			→ 863D:	100	18,7-19,3
			0 - 1 - 0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			
					:	

Checking values in brackets

B. Governor Settings

RQ 250/1200 AB862DR

Checkin	g of slider	Full-load s	peed re	gulation		Idle spec	ed regula	ation		Torque o	ontroi
PRG che	Control rod	Setting po	unt Control	Test spec	cifications (4)	Setting p	Control	Test spe	Cifications 5		Control rod
rev/min	travel mm 2	rev/min 3	rod travel mm 4	rod travel mm 5	rev/riin 6	rev/min	rod travel	rev/min 9	travel	rev/min	travel mm 12
550	15,7-16,3	550	16,0	1220 1300 1350 1440	15,0-15,4 5,4- 9,0 0 - 7,5	510	0	150 250 350 420	6,4-8,1 4,3-6,5 0,8-3,3	600 700	15,8-16,0 15,4-15,7
						ļ					

Torque-control travel on flyweight assembly dimension a

0,2 _{mm}

Speed regulation At1240-1260=

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	delivery on control lever mp_40°C (104·F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting f	tuel delivery d Coptrol
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm³/-1000 strokes	rev/min	rod travel cm³/1000 strokes / mm 7
ca.	10 mm RW					
Adju		38 bar = 0.2-0.3	mm de	crease in CRT	p 241	with 861 D):
	Measurement O.:	25 bar = 1.1-1.3	mm de	crease in CRT	· · · · · · · · · · · · · · · · · · ·	

Checking values in brackets

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 BOL 5,0 a Edition 5.72

PES 6 A 85 C 320 RS 2160 S2160, Z,Y,X,V

ROV 200-1200 AB5745 RQV 200-1200 AB743R,751R

supersedes (2)company

5.71 **Bolinder**

S 2160

RQV 200-1400 AB635R

engine

D 50 A

Values apply to fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testors

A. Fuel Injection Pump Settings

Port closing at prestroke

 2.0 ± 0.1

mm (from BDC)

Rotational speed	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
	12	5,6 - 6,0	0,3			$2,5 \pm 0,1*$ (max. 2,2-2,9)
1000	6	0,1 - 0,6				(11111111111111111111111111111111111111
1000	9	1,8 - 2,5				
200	9	0,9 - 1,6				

Adjust the fuel delivery from each outlet according to the values in [

*In the case of greater dispersion alter the delivery-valve spring pre-tension

accordingly.

B. Governor Settings

RQV 200-1200 AB 574R,

(1)

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed		Stictings	leeve travel
deflection of control	rod travel		(1a) (2a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		0
lever	mm mm	rev/min	28)	lever	rev/min 5	mm (4)	lever	rev/min	mm (3)	rev/min 10	
	-	3		*	3	0	1	-	9	10	11
ca.68		18,0-21 14,0-18 9,7-15 0 - 8	,2 ,0	-	-	-	ca.10	100 200 300 400 550	5,6-8,0 3,3-5,5 2,7-3,7 1,8-3,1 0,3-1,5	-	-
							3a				

Torque control travel a =

estoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	very characteristics 5a	Starting Idle switchin		Torque- travel	Control rod
rev/min 1	cm ³ /1000 strokes	rev/min 4a	rev/min 4	cm ³ /1000 strokes	rev/min 6	cm³/1000 strokes 7	rev/min	travel mm
1200	47,7-49,7	1220	500	41,0-44,0		11,5-16,5 ion max.3	(ca.	RW 7)
	see (2)							./.

Checking values in brackets

D. GOVE	ernor	Serrin	95			RQV 20	00-1200	AB743 R				
Upper rated s	peed			Intermediate	rated spe	eed	Lower rated	speed			Cludina	eeve travel
	flection Control travel control rodtravel mm			Degree of deflection of control lever rev/min mm (Degree of deflection of control lever	deflection travel of control			3) rev/min mm	
1	2	3	_	4	5	6	7	8	9		10	11
ca.68	1200 1250 1300 1380 1470	15,0-18 10,8-19 6,4-18 0 - 0	5,2	-	-	-	ca.12	100 250 350 450 630	7,0-8 4,9-7 2,4-4 1,6-3	,1 ,5		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°	C (104°F) 2	Rotational-speed (2b) limitation intermediate speed rev/min (2)(4a)	high idle s	peed 5b cm ³ /1000 strokes	ldle switchir		Torque- travel	Control rod travel
1 2	20°	з 40°	4	5	6	7	8	9
	0 - 43,0	38,5 - 40,5		(Column 6-8,	see	(1))		

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

RQV 200-1400 AB 635 R (3)

AB751R (2)

Upper rated spe	ed			Intermediate	rated spe	ed		Lower rated	speed			Studing of	eeve travel
deflection Co of control ro	ontrol od travel	mm	1a) 2a)	Degree of deflection of control lever		Control rod travel mm	\	Degree of deflection of control lever	rev/min	Control r travel mm	od 3	rev/min	mm
1 2	2	3		4	5	6		7	8	9		10	11
1 1 1 1	1400 1440 1520 1600 1700	15,0-18, 12,0-16, 6,0-11, 0 - 0,	0	•	-	-		ca.12	100 250 300 400 600 810	6,4-8 3,2-5 2,8-3 1,8-3 0,3-1	,1 ,8 ,2		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

	Full-load de Control-rod Test oil tem		intermediate speed	Fuel deln high idle s	very characteristics 5a speed 5b	Starting Idle switchir		Torque- travel	Control rod
	rev/min	cm³/1000 strokes	rev/min (4a)	rev/min	cm³/1000 strakes	rev/min	cm ⁴ /1000 strokes	rev/min	travel mm
	1	2	3	4	5	6	7	8	9
(3)	1400	47,7-49,7	1420	500	39,5-42,5 di	1500 spers	11,5-16,5) ion max.3	(ca.	RW 7)
	At n = the st	op lever to m	device: = 1200 and n ove the contr nd full-load	ol rod	to control-	ust be rod tr	possible wi avel O (stop	th)	מ

Checking values in brackets

Test Specifications Fuel Injection Pumps (A) and Governors

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VDT-WPP 001/4 SCL 4,3 a Edition 2.67

En

PES 4 A 75 C 410 RS 1104 *
PES 4 A 70 C 410 RS 1193**

EP/RSV 250-1000 A1B 426D

supersedes 11.65

company engine (SCHL 4,3a) Schlüter SD 100 W4

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

7 Ø**

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
1000	12	6,5- 7,0	0,4			
•	6 18	1,2- 2,3 10,9-11,9				
200	6	0,6-1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe Degree of deflection of control	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	hate rated	speed	Control- lever deflection	Lower	rated speed Control rod travel mm	1 3	rque control Control rod travel mm
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
ca.51	1000	12,0				ca.22	250	5,5	980	0
	1030 1050	8,4 5,4	spri	out au ng	XIIIa	ry	100	19 - 21	950	0
29	1060 1100	5,7-9,4 3,8-5,4 1,0-3,2 0,3-1.0	with spri	auxil ng	iary		250 350 450 550	5,2-5,8 2,8-4,1 0 -2,1 0 - 1	800 700 350	0,3-0,5 0,5-0,7 0,5-0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	39 FL	uel delivery naracteristics	Starting I	luel delivery 5	4a Idle stop		
Test oil to rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm*1000 strokes	rev/min	cm \$1000 strokes	rev/min 8	Control rod travel mm	
980	45,0 - 47,0	1020	700 500	46,5 - 49,5 45,0 - 48,0	100	19 mm RW	250	5,5	
								./.	

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

estoil-ISO 4113

All test specifications are valid for Bosch Friel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,1 + 0,1

mm (from BDC)

7,5 Ø *

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,7 -	0,3			
*	6 15	1,9 - 2,6 10,4 -11,5				
200	6	0,9 - 1,8				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lowe rev/min 8	r rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm 11
ca.51	1000 1030 1050	12,0 8,4 5,4		without auxiliar			250 100 250	5,5 19 - 21 5,2-5,8	980 950 800	0 0 0,3-0,5
22	1030 1060 1100	5,7-9,4 3,8-5,4 1,0-3,2 0,3-1,0	with spri	auxil ng	iary		350 450 550	2,8-4,1 0 -2,1 0 - 1	700 350	0,5-0,7 0,5-0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting I	fuel delivery 5	4a Idle stop	
Test oil to rev/min 1	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm 1000 strokes	rev/min 8	Control rod travel mm
980	50,5 - 52,5	1010-1020	900 700 500	49,5 - 52,5 51,5 - 54,5 48,0 - 51,0	100	20 mm RW	250	5,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 41

Test Specifications Fuel Injection Pumps (A) and Governors

40

En

PES 4 A 85 C 410 RS 2246 EP/RSV 250-1100 A1 B168L 289 L PES 4 A 90 C 410 RS 2231 EP/RSV 250-1100 A1 B154DL B288DL B289L supersedes company engine

Kaelble MD 215 v -

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

**

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery 8,5 Ø cm³/100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery 9 Ø cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	9	4,9 - 5,5		7	5,9 - 6,4	
1000 [,] 200	6 15 6	1,3 - 2,1 12,3 -13,1 0,1 - 0,9		6 12 9	2,3 - 3,1 9,5 -10,4 3,2 - 4,1	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

.. A 1 B 168, 289,

	r rated spee Control rod travel mm	d rev/min Control rod travel mm rev/min	Interme	diate rate	d speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To rev/min 10	rque control Control rod travel mm
ca.64	1100 1150 1200 1170 1250 1350	16,0 12,1 6,8 8,5-11,0 7,8-3,5 0 - 1	spri	ng auxi	uxilia liary	ca.27 ry	250 100 250 350 450	6,0 19 - 21 5,7-6,3 1,1-3,5 0 - 1	1080 400 300	0 0 1,2 - 1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	II-load stop	speed limital Characteristics		Starting f	uel delivery 5	(4a) idl	e stop	
Test oil te	cm ³ /1000 strokes	Note changed to) rev/min	rev/min	cm³/1000 strokes	rev/min	cm\$1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
9	ort closing diff mm and 21 mm = 2mm and 21 mm =	3-4° (8,5 Ø) cams					

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

estoil-ISO 41

Degree of deflection of control lever 1	Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control- lever deflection in de_rees 7	Lower rev/min 8	rated speed Control rod travel mm	rque control Control rod travel mm 11
20									

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop emp. 40°C (104°F)	Rotational- speed limitat. Note: changed to)		el delivery aracteristics	Starting f	uel delivery 5	4	e stop Control rod I travel
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

B. Governor Settings

..A 1 B 134 DL, 288 DL

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	1 9 1	rque control Control rod travel mm
ca.64	1100 1150 1200	16,0 12,1 6,8	withous spring	out aux ng	xiliar	ca.27 y	250 100 250	6,0 19 - 21 5,7-6,3	1080 900	0 0,6-0,8
2 a	1170 1260 1350	8,5-10,5 1,0-4,0 0-1	with sprir	auxil ng	iary		400 600	2,0-4,0	500	0,9-1,1

C. Settings for Fuel Injection Pump with Fitted Governor

2b) Fu	li-load stop	Rotational- speed limitat				Starting fuel delivery 5 4a Idle stop				
Test oil te rev/min	cm ³ /1000 strokes	Note: changed to) rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 °*rokes	rev/min	Control rod travel mm		
1	2	3	4	5	6	7	8	9		

Checking values in brackets En

* 1 mm less control rod travel than col. 2

D8

Testoil-ISO 4113

^{* 1} mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (A) and Governors

40

VDT-WPP 001/4 Edition 9.5.72

En

PES 4 A 85 C 320/3 RS 2284 PES 6 A 85 C 320/3 RS 2285 PES 6 A 85 C 320/3 RS 2260 PES 4 A 85 C 320/3 RS 2338 PES 6 A 85 C 320/3 RS 2339

EP/RSV 250-1250 A 1 B 279 200-1250 A 1 B 525 B 279

B 279 350-1250 A 1 B 279 supersedes company 1.7.69 21.1.71 Motori VM

engine VM 104 SU, 954 SU VM 106 SU, 956 SU

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,7+0,1 3,0+0,1 RW 9 RW 9

mm (from BDC)

2260 2284/85, 2338/39

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fugl delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	crr#i 100 strokes	mm 2	cm ⁹ /100 strokes	mm 6
	9	4,9 - 5,5	0,4	2	3	0
1000-	6 15	1,3 - 2,1 12,3 -13,1				
200	6	0,1 - 0,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250-1250

1 Uppe	r rated speed	rev/min	Intermed	liate rated	speed	4	Lower	rated speed	(3) To	rque control
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel
of control tever	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.70	1250	16,0	. ماط شد د		w 41 45	ca.26	250	5,5	1200	0
	1300 1350	11,0 4,2	spri	out au ng	XIIIa	У	100 250	19 - 21 5,2-5,8	600	0
		1,0-9,0 1,0-3,4	1	auxil	iary		300 430	4,0-5,0 0 - 1	300	1,2-1,8
2a	1440	0 - 1	spri	ng						

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	4a Idle stop		
rev/min	emp 40°C (104°F) cm\$/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min 6	cm¶1000 strokes 7	rev/min	Control rod travel mm	
1230	53,0 - 55,0	1270		·	100 →	9,9-11,9 2338/39	200	6,0 525	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Testoil-ISO 4113

B. Gov	ernor	Settings				200-12	:50			
Upper rated speed rev/min Degree of deflection of control lever 1		Interme	lever defle		Control- lever deflection in degrees	lever travel deflection rev/min mm			rque control Control rod travel mm	
ca.70	1250 1300	16,0 11,0	*	<u> 1° </u>		ca.25	200	6,0	1230	0
	1340 1340	6,0 3,5-8,0]				100 200	19 - 21 5,7-6,3	400	0
(2a)	1380 1460	0,8-3,5 0 - 1	**				300 420	2,2-3,9	250	1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational- speed limitat.		nel delivery paracteristics	Starting f	uel delivery 5	da Idie stop	
rev/min	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
		İ						
į								

Checking values in brackets

23

* 1 mm less control rod travel than col. 2

B. Governor Settings

350-1250

	r rated speed Control rod travel mm		Interme	ediate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	1(0)	rque control Control rod travel mm
ca.70	1250 1300 1350	16,0 11,0 '4,2		without spring	auxi	ca.27 liary	350 200 350	6,0 19 - 21 5,7-6,3	1230 500	0
29	1320 1360 1450	6,2-9,6 2,1-5,0 0 - 1	4	with au spring	xilia	ry	420 500	1,5-2,6 0 - 1	380	1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	Rotational-speed limitat. Solution Sol			Starting f	uel delivery 5	4a idle stop		
rev/min	mp. 40°C (104°F) cm³/1000 strokes % 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes	rev/min 6	cm³/1000 strokes 7		Control rod travel mm 9	

Checking values in brackets En

VDT-WPP 001/4 STE 6.0h Edition 12.71

PE 6 A 85 C 412 RS 2303

(D)

250/1400 AB741DL RQV 250-1400 AB681DL

ROV 250-1400 AB804DL

(2)supersedes (1)

Steyr company 610.72

(2)For full-load setting pay attention to "without" or "with" running-in capsule (RQ governor). Refer to page 3 for smoke-limiter setting!

(170 PS - 1)610.60,69,70 (150 PS - 2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,5 + 0,1

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery "C" cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery "D" cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	4,9 - 5,5	0,4	9	4,1 - 4,5	
t .	6 15	1,3 - 2,1 12,3 -13,1		6	0,6 - 1,4	
200	6	0,1 - 0,9		9	1,4 - 2,2	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ .. AB 741 DL (2)

Checkin PRG che rev/min 1	Control rod			_	cifications (4) rev/min 6	7 8 9 10				Torque o	Control rod (3)
550	15,7-16,3	550	16,0	1400 1450 1500 1580	14,3-14,5 8,0-12,6 0 - 7,7 0	510	0	100 200 300 410	6,2-8,1 4,9-6,8 2,3-4,5 0		15,7-16,0 14,7-15,0

Torque-control travel on flyweight assembly dimension a =

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting for	
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /~1000 strokes 5		rev/min 6	Control red travel cm ³ /1000 strokes:/ mm
1400 1400	72,5-74,5 withou 68,5-71,5 with	t	800	kp/cm ² 71,5-74,5 kp/cm ² 58,0-61,0			
•							./.

Checking values in brackets

	\odot
travel	\odot

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding of	ague travel
deflection	rev/min Control rodtravel mm	rev/min		Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min		rev/min	mm
ca.65	1400 1440 1520 1600 1660	15,0-17 11,6-15 4,4- 9 0 - 4	0,6		-	-	ca.10	150 250 500 700 950	7,4-8,0 5,4-7,4 3,2-4,0 1,7-3,4	-	_

Torque control travel a =

B. Governor Settings

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	stop	Rotational-speed (2b) Ilmitation intermediate speed	Fuel deliv high idle s	rery characteristics (5a) (5b)	Starting idle switchir		6	Torque- travel	Control co
rev/min	cm \$1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 stroke	es	rev/min	travel mm
0,4 1400	kp/cm ² 78,0-80,0	1430	0,4 800 0 500	kp/cm ² 69,0-72,0 kp/cm ² 56,0-59,0					

thecking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

RQV .. AB 804 DL (2)

Upper rated s	speed			Intermediate	rated spe	ed	Lower rated	speed		Stiding st	eeve travel
Degree of deflection of control lever	rev/min Control rod travel mm	mm		Degree of deflection of control lever		Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.65	1400 1440 1520 1600 1660	15,0-17, 11,6-15, 4,4- 9, 0 - 4,	0	-	-	-	ca.10	150 250 500 700 950	7,4-8,0 5,4-7,4 3,2-4,0 1,7-3,4 0		0 0,1-0,3 0,8-1,0

Torque control travel a -

0,9 _{mm}

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) ilmitation intermediate speed (4a)	Fuel deliv	rery characteristics 5a speed 5b	Starting Idle switchin		Torque- travel	Control roo
rev/min	cm³/1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ⁴ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
0,4 1400	kp/cm ² 72,5-74,5	1430	0,4 800 0 500	kp/cm ² 71,5-74,5 kp/cm ² 58,0-61,0				

Checking values in brackets

Setting of smoke limiter:

- 1. Basic setting of pump (Section A) and governor (Section B) without smoke limiter.
- Set full-load delivery (quantity data with charge-air pressure) at full-load stop screw of governor: Test fuel-delivery characteristics.
- 3. Attach smoke limiter.
- 4. Set start and end of adjustment at guide sleeve (spring seat) of diaphragm housing:

with741 DL	Start = 0.18 kp/cm ² End = 0.28 kp/cm ²)	difference approx. 0.5 mm control-rod travel
with681 DL	Start = 0.16 kp/cm ² End = 0.28 kp/cm ²)	difference approx. 0.3 mm control-rod travel
with804 DL	Start = 0.18 kp/cm ² End = 0.27 kp/cm ²)	difference approx. 0.9 mm control-rod travel

- 5. Set full-load delivery with O kp/cm^2 at <u>bell crank</u> of smoke limiter.
- 6. Correct full-load delivery 0.5 cm² with maximum control-rod travel and at corresponding speed of fuel-delivery characteristics at nexagon bolt of housing in smoke limiter, max. charge-air pressure; measure fuel-delivery characteristics with increasing speeds.
- 7. Test automatic control-rod stop, measure switching point $n = 130 200 \text{ min}^{-1}$ (RQV governor)
- 8. Additional final measurement with disposable capsule (RQ governor)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps (A) and Governors

40

VDT-WPP 001/4 21.1.71

En

PES 4 A 85 C 320/3 RS 2284 PES 6 A 85 C 320/3 RS 2285 EP/RSV 250-1250 A 1 B 279 supersedes 200-1250 A 1 B 525 company

1.7.69 Motori VM VM 104 SU, 954 SU VM 106 SU, 956 SU

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,0 + 0,1

mm (from BDcbei RW9

Rotational speed	Control rod travel	Fuel delivery	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
	9	4,9 - 5,5	0,4			
1000 •	6	1,3 - 2,1				
	15	12,3 -13,1				
200	6	0,1 - 0,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250 - 1250 '

	r rated speed Control rod travel mm 2		Intermed	Intermediate rated speed			Lower rev/min 8	rated speed Control rod travel mm		rque control Control rod travel mm
ca.70	1250 1300 1350	16,0 11,0 4,2	with spr	nout a	uxilia	ca.26 ry	250 100 250	5,5 19 - 21 5,2-5,8	1200 600	0
28	1330 1380 1440	4,0-9,0 1,0-3,4 0 - 1	with spr	n auxi ing	liary		300 430	4,0-5,0 0 - 1	300	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		net delivery naracteristics	Starting f	uel delivery 5	(4a) tdl	I Control rod	
rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm#1000 strokes	rev/min 6	cm∯1000 strakes 7	rev/min 8	travel mm	
1230	53,0~55,0	1270			100	7,4-8,9			

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	To rev/min	rque control Control rod travel mm
ca.70	1250 1300 1340	16,0 11,0 6,0	witho sprin	out aux ng	kiliar	ca.25 y	200 100 200	6,0 19 - 21 5,7-6,3	1230 400	0
28		3,5-8,0 0,8-3,5 0 - 1	with sprin	auxil ng	iary		300 420	2,2-3,9	250	1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop	Speed inititat	3a Fu	al delivery aracteristics	Starting f	uel delivery 5	da idle stop		
	emp. 40°C (104°F) cm ³ /1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1 00 0 strokes 5	rev/min	cm³/1000 strokes 7		travel mm 9	
1230	53,0 - 55,0	1270			100	7,4-8,9	200	6,0	

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

	r rated speed Control rod travel mm	Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	rque control Control rod travel mm
28								

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop emp. 40°C (104°F)	Rotational- speed limitat.		el delivery aracteristics	Starting fuel delivery 5 da Idle stop				
rev/min	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	travel mm 9	

Checking values in brackets En

40

VDT-WPP 001/4 Edition 7.9.73

En

PES 3 A 85 C 410 RS 1228 EP/RSV 250-1000 A1 B12, 46 14.2.67 supersedes PES 4 A 85 B 410 RS 556 EP/RSV 200- 900 A1 A316 9.4.70 PES 2 A 85 C 410 RS 2032 PES 3 A 85 C 410 RS 2052 company Motovi VM EP/RSV 250- 900 A1 B316,273 EP/RSV 250-1000 A1B1068 engine PES 3 A 85 D 410/3 RS1285 VM 60 DA VM 45 DA PES 4 A 85 D 410/3 RS2410 A1B1059 All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,7 + 0,05

mm (from BDC)

Rotational speed rev/min 1	travel	Fuel delivery "C" u. "D" cm³/100 strokes 3 8,50	Difference cm³/ 100 strokes	Control rod travél mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre tensioning atorque-control valve) mm 6
	9	6,0 - 6,4	0,4			
1000	ნ 16	2,0 - 2,8				
200	6	1,0 - 1,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

estoil-ISO 4113

200-900 A1 A316

Degree of deflection of control lever	r rated speed Control rod travel mm	d rev/min Control rod travel mm rev/min 3	Intermed	fiate rated	speed 6	Control lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm 11
ca.47	900 930 980	16,0 10,4 5,5	*			ca.21	200 100	6 19 - 21	880 400	0
2 a		8,8-11,6 2,0- 4,0 0 - 1	**		į		200 250 450	5,7-6,3 4,2 - 5,2 0 - 1	250	1,2-1,8
ca.50		16,0 10,0 5,4 5,6-9,6 0,9-3,2 0 - 1	** W	ithout oring ith aux oring		•	250 100 250 350 450	8 19 - 21 5,7-6,3 1,0-3,4 0 - 1	880 400 300	0 0 1,2-1,8

Pert closing difference between control-rod travel 13 mm and 21 = $6-7,5^{\circ}$ camshaft.

Testoil-ISO 4113

	_		_	_	
	A			_44:	
H	Linu	erno	17	etti	
┏.	401			~ 661	

(1) Uppe	Upper rated speed rev/min			Intermediate rated speed			- Lowe	3 Forque control		
Degree of deflection of control lever 1	travel mm	travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
ca.55	1000	16,0				ca.25	250	6,0	980	0
	1050 1100	11,5	*				100 250	19 - 21 5,7-6,3	290	1,2-1,8
29	1060 1140 1220	9 - 11 1,0-3,5 0 - 1	**				350 440	1,1-3,4		1,2 1,0

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational- speed limitat.		nel delivery aracteristics	Starting (uel delivery 5	48 Idl	e stop Control rod
rev/min 1	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strakes 7	rev/min 8	travel mm 9
ca. Ca	10 mm RW rry out adjustm	- <u>910</u> ent on engin 1020	e				200 250 (6 6 316)

Checking values in brackets

B. Governor Settings

250...1000 A 1 A oder B 11,12,46

11	r rated speed Control rod travel mm		Intermediate rated speed 4 5 6			Control- lever deflection in degrees 7		rated speed Control rod travel mm 9	1 2	rque control Control rod travel mm 11
ca.55	1000 1060 1100	16 10,5 5,7		ithout pring	auxi	ca.25 iary	250 100	6 19 - 21	980 400	0
2a	1100 1150 1250	3,5-7,8 0,5-3,2 0 - 1		ith au pring	xiliaı	y	200 300 450	7,6-8,8 3,7-4,8 0 - 1	300	1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat.	Starting f	uel delivery 5	(4a) Idi	4a tdle stop		
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
		·						
		ŀ						ì
								:
		<u>i </u>	İ					

Checking values in brackets

* 1 mm less control rod travel than col. 2

^{* 1} mm less control rod travel than col. 2

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VDT-WPP 001/4 Edition 5.12.72

En

PES 6 A 90 D 410 LS 2377

EP/RSV400-1250 A2 B640DL ROV 300-1100 AB 838 DL ./.

supersedes company 8.8.72 G M C - USA

engine

DH 478

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

End of pump delivery

4,0 + 0,1

mm (from BDC)

Mark on drive 24° from perpendicular!

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes	cm³/ 100 strokes	mm 2	cm ⁹ /100 strokes	mm 6
	9	5,0 - 5,5	0,4			
1000	6 12	2,1 - 3,1 7,8 - 8,8				
200	9	2,2 - 3,2				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

EP/RSV ... 640 DL

1 Uppe	r rated speed	rev/min	Interme	diate rated	d speed	4	Luwe	rated speed	(3) To	rque control
Degree of deflection of control lever	Controlicus travel mm	**nt rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm		Control rod travel mm
ca.48	1250 1300	16,0 11,6	with	out au	ıxilia	ca.21	400	6,0	1230	0
	1350	6,8	spri	ng			150 400	19 - 21 5,7-6,3	1230	· ·
29	1340 1400 1540	6,2-9,2 2,0-3,7 0 - 1		with auxiliary spring			550 740	2,2-4,0	500	0,8-1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

C	Full-load stop [est oil temp 40°C (104°F) Rotational-speed limital			iel delivery naracteristics	Starting Idle	fuel delivery 5	4a) Idle stop		
	cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm·/1000 strokes 5	rev/min	cm+1000 strokes	rev/min	Control rod travel mm	
1250	71,0-73,0 (70,5-73,5)	1270	500	60,5 - 63,5 (60,0 - 64,0)	100	8,9-9,9	400	7,25- 11,25	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of German, Imprime en Republique Federale d Allemagne par Robert Bosch GmbH.

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B. Governor Settings

	pper rated speed egree of rev/min Control rod							Lower rated	speed	Stiding s	Sliding sleeve travel	
Degree of deflection of control lever	Control	travel	(1a) (2a)	Degree of deflection of control leyer	rev/min 5	Control rod travel mm (4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mm 11
ca.66	1 1	15,0-17, 10 -14 1,5-8,		-	-	-		ca.10	400 600	7,1-8,0 2,5-4,2 1,6-3,0	1400	0 1,0-1,2
	1730	. 0						(3a)	890	U		1,8-2,6 4,5-4,9 8,3

Torque control travel a = 1,1 mm

C. Settings for Fuel Injection Pump with Fitted Governor

		·						
Full-load d Control-roa Test oil ten		Rotational-sr,eed (2b) limitation intermediate speed	Fuel delin characte high idle s	ristics	Starting Idle switching	fuel delivery 6	Torque- travel	control 5
rev/min 1	cm ³ /1000 strokes 2	rev/min (4a)	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min	travel mm 9
1400	69,5-71,5	1130	1200 800	66,0-69,0 · 60,5-63,5	Chang 180-2	e-over point 250	<u> </u>	
					300 100 1510	12,25-16,25 89,25-99,25 23,25-31,25		

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n ⇒ rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting		Measurement		diminution Control rod travel-
	Gauge pressure :	bar	Gauge pressure =	bar	difference

VDT-WPP 001/4 Edition 16.9.70

20.1.70 PES 8 A 75 C 320 RS2286 supersedes RQV 300-1500 AB726D,724D,722D 3.3.70 RQ 300/1500 AB727D,725D,723D See page 4! 17.3.70 engine 1 - 8 - 7 - 3 - 6 - 5 - 4 - 2 22.7.70 IHC

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

DV 550/460 (200,180,160 PS)

A. Fuel injection Pump Settings

End of pump delivery

Port closing at prestroke 3.95 + 0.1 mm (from BDC)

RW 10,0

Rotational speed rev/min	Control rod trave! mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1500	10,0	6,2 - 6,5				
1500	ca.6,5	max. 3,1	(Cyl.1-4-	5-7)		
300	ca.7,0	0,1 - 1,4 min. 2,5 0,1 - 0,4	(Cyl.2-3- (Cyl.1-4- (Cyl.2-3-	5-7)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV .. AB726DR

Upper rated :	speed	1		Intermediate	rated sp	ed	Lower rate	speed		CL discussion in the control of the	
Degree of deflection of control lover	rev/min Control rod travel mm 2	mm		Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
ca.68 ca.65	2000 1500	15,0-18, 0 15,0-17, 10,0-14, 4,6-10,	6	-	•	-	ca.10	250 400 500 650 360	6,5-8,2 2,9-4,5 2,3-3,3 1,1-2,1		0
							(3a)				

Torque control travel a :

C. Settings for Fuel Injection Pump with Fitted Governor

				P					
Full-load d Control-ro Test oil ter		PC (104°F) 2 Ilmitation intermediate speed		very characteristics 5a speed 5b	idie	fuel delivery 6	Torque- travei	control 5	
rev/min 1	cm³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/inin	travel mm	
1500 (RW	ნკ,5-65,5 10,0)	1540: 0,1mm- 1625:2,5-3,5 mm less than column 2	1000	59,5-63,5	100 300 (Cyl.	8,1-10,4 1,4- 1,8 1-4-6-7)	8	9	

Checking values in brackets

* 1 mm less control rod travel than col. 2

estoil-ISO 4113

B. Gov	ernor	Settin	gs				RQV	AB8	722DR		-:
Upper rated	speed			Intermediate	rated spe	eed	Lower rated	speed		Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rodtravel mm	Control rod travel mm rev/min	(1a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68	1600 2000	15,0-18 0	,2	-	-	-	ca.10	250 400	6,5-8,2 2,9-4,5	1500	0
ca.65		15,0-17 10,0-14 4,6-10 0	,0					500 650 860	2,3-3,3 1,1-2,1 0		0 0,6-0,8 0,9-1,1
							(3a)		đ		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	stop	Rotational-speed (2b) limitation intermediate speed	Fuel deln high idle s	very characteristics (5a) speed (50)	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm ³ 1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes 5	rev/min	cm3/1000 strokes	rev/min	travel mm
(180PS) 1 500	59,0-61,0 (RW 9,5)	1540: 0,1mm- 1625:2,0-3,0 nm ** less than column 2		54,0-58,0	100 300 (Cy1	8,1-10,4 1,4 -1,8 1-4-6-7)	ca.RW	

Checking values in brackets

B. Governor Settings

Upper rated	speed		Intermediate	e rated spe	ed	Lower rated	speed		Studions	
Degree of deflection of control lever	rev/min Control rod travel mm	travel (1/2) mm rev/min (2/2)	of control	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm
ca.68	1600 2000 1500 1600 1700	15,0-18, 0 15,0-17, 10,0-14, 4,6-10,	5	-	-	ca.10	250 400 500 650 860	6,5-8,2 2,9-4,5 2,3-3,3 1,1-2,1	1500 1300 1000	0 0,4-0,6 0,5-0,7 0,5-0,7
	1940	0				<u>За</u>				

Torque control travel a = 0,6 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil terr rev/min		Rotational-speed (2b) Imitation Intermediate speed rev/min	Fuel delin high idle s rev/min	very characteristics 5a 5b cm³/1000 strokes	switchi		Torque- travel rev/min	Control rod travel
1	2	3	4	5	6	7	8	9
(160PS 1500) 49,0-51,0 (RW 8,4)	1540: 0,1mm 1625:1,5-2, mm **		45,0 - 48,0				

Checking values in brackets

* 1 mm less control rod travel than col 2

^{* 1} mm less control rod travel than col 2

	ontrol rod avel	Full load s Setting po rev/min 3	•	•	rev/min	Idle spec Setting p rev/min 7	-	Test spe	cifications 5 Control rod	Torque o rev/min 11	Control rod 3
(VH ca ** 1540 1625=	19,6-20,4 a. 49°) = max.0,1 2,5-3,5mm ess than load	mm -	20,0	1500 1600 1650 1770	17,8-18,2 7,0-13,6 0 -10 0	590	0	200 300	8,4-11,5 6,2-9,5	900	19,9-20,0 19,2-19,5 18,3-18,6

Torque-control travel on flyweight assembly dimension a

0,45

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

uil-load delivery on overnor control lever est oil temp 40°C (104 F)		Control rod stop 3a	Fuel delive	ery characteristics	Starting fuel delivery Idle speed Contr		
rev/min	cm ³ /-1000 strokes 2	rev/min	rev/min	cm ³ /-1000 strokes 5	rev/min 6	rod travel cm ³ /1000 strokes / mm 7	
(200PS) 1500	63,5-65,5 (RW 10,0)		1000	59,5 - 63,5	100	8,1 - 10,4	
	** Breakaray			***	300 (Cy1	1,4 - 1,8 . 1-4-6-7)	

Checking values in brackets

estoil-ISO 4113

B. Governor Settings

RQ .. AB 723 DR

	500		,								
Checkin	g of slider	Full load	speed re	gulation		Idle spe	ed regula	ation	_	Torque o	control
PRG che		Setting po		•	cifications (4)	Setting		Test spe	cifications (5)	•	3
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel rnm 5	rev/min	rev/min 7	Control rod travel mm	rev/min	travel mm	rev/min	Control rod travel mm
(VH ** 1540 1625	=2,0-3,0mm	650 m-	20,0	1500 1600 1650 .1770	17,6-18,0 7,0-13,7 0 -10	630	0	200	9,8-12,6 8,4-11,5 6,2- 9,5 2,8- 6,2	900	19,9-20,0 19,2-19,5 18,2-18,6
RW ful	less than load								!		

Torque-control travel on flyweight assembly dimension a =

Speed regulation At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

governor o	ill-load delivery on overnor control lever st oil temp 40°C (104°F)		r control lever (2) (3a)				Fuel delive	ery characteristics	3 b	Control			
rev/min	cm ³ /-1000 strokes		rev/min 3		rev/min	cm³/-1000 strokes 5		revimin 6	red travel cm ⁻⁷ /1000 strokes / mm 7				
(180PS 1500	59,0-61,0 (RW 9,5)				1000	54,0 - 58,0			8,1 - 10,1 1,4 - 1,8 1-4-6-7) RW5,3)				

Checking values in brackets

Checking of slider PRG check	Full-load	•				Idle speed regulation Setting point Test specifications (5)				Torque control		
rev/min mm	rev/min	rod travel mm	Control rod travel mm 5	rev/min	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm		Control rod travel mm 12		
650 19,6-20,4 (VH ca.49°) Abregelbeginn: 1540 = max.0,1 1625 = 1,5-2,5 RW less than full load	mm-	20,0	1500 1600 1670 1780	18,3-18,6 7,6-14,6 0 - 9,2 0		0	100 200 300 400 520	8,3-11,4 6,1- 9,2	1250	19,7-20,0 19,0-19,4 18,6-18,9		

Torque-control travel on flyweight assembly dimension a

0,35 mm

Speed regulation, At

t mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np 40°C (104 F)	Control rod stop	Fuel deliv	ery characteristics	(OL)	Starting for Idle speed	uel delivery (5 Control
rev/min	cm ³ /-1000 strokes 2	rev/min	rev/min	cm ³ /-1000 strokes 5		rev/min 6	rod travel cm ³ /1000 strokes / mm · · , 7
1500	49,0 - 51,0 (RW 8,4)		1000	45,0 - 48,0 (ca.RW 9,1)		100	8,1 - 10,4
	(NH 034)			(ca.iii 3,17		300 (Cyl. (ca.R	1,4 - 1,8 1-4-6-7) W 5,3)
		:				(ca.R	W 5,3)

Checking values in brackets

Supply pressure = 1.5 bar now = 2.5 bar - can be seen from groove at hexagon socket of overflow valve!

Further test instructions:

- With vehicle stopped, check whether stop is reliably attained with shutoff device from full-load setting. It is to be ensured in the process that the pin of the control-rod stop does not move back as well.
- 2. Set shutoff device to 0.5 mm 1.0 mm.
- 3. In start-of-delivery setting of cyl. 1 (on drive) and with CRT 10.0 (200 bhp), 9.5(180 bhp) and 8.4 (160 bhp) effect movement with fixing device (press down pin in doing so) until pin is in camshaft groove. Tighten device and check again; correct if necessary. Then drill and pin pump housing. In this position, set coupling such that the jaws are exactly horizontal; in doing so, check whether coupling turns easily.

<u>Caution:</u> Fixing device must not be used when tightening coupling!

4. After setting idle delivery, check locking and unlocking (between 200 and 250).

Testoil-ISO 4113

2

estoil-ISO 41

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 KHD 10,0 Edition 25.11.65

En

PE 8 A 90 C 410 LS 2190

RQ 250/1400 AB 575 DL (1) 250/1300 (2) supersedes

company.

KHD FB 8 L 312

(200 PS-1) (180 PS-2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

	mm 2	cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,9 - 6,4	0,4			_
200	6 15 9	2,3 - 3,1 14,2 -15,5 3,8 - 4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250/1400

Checking PRG che rev/min	ck Control rod travel	Full-load s Setting po rev/min 3	•	_	rev/min	Idle spee Setting p rev/min 7	Control rod travel	Test spe	cifications Control rod travel mm 10	rev/min	Control rod (3) travel mm
1300	13,6-14,4	1300	14,0	1400 1440 1460 1520	0 - 9,4	520	0	250	6,2-8,1 4,2-6,5 0,8-3,2 0	700 850 1000	15,8-16 15,2-15,5 14,2-14,6

Torque-control travel on flyweight assembly dimension a

0,05

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co Test oil terr		Control rod stop (3a)	Fuel delive	ery characteristics 3b	Starting f	Control
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm 7
1380	74,5 - 76,5					
						./.

Checking values in brackets

Checkin- PRG che rev/min 1		Full-load s Setting po rev/min 3		•	rev/min	Idle spee Setting p rev/min 7	Control rod travel		cifications 5 Control rod travel mm	rev/min	Control rod (3) travel mm 12
550	15,7-16,3	550	16,0	1300 1320 1350 1420	0 - 9,5	500	0	100 200 300 400	6,2-8,1 4,8-6,8 2,0-4,5 0	700 900 1050	15,8-16,0 15,1-15,4 14,4-14,6

Torque-control travel on flyweight assembly dimension a

0,5 m

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor o Test oil ten	elivery on control lever np 40°C (104 F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting for	uel delivery d Control
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	rod travel cm ³ /1000 strokes/mm ::: 7
1280	74,5 - 76,5					
			† !	1		
			;	;		

Checking values in brackets

Testoil-ISO 4113

B. Governor Settings

	Checking	g of slider		Full-load s	speed reg	gulation		Idle spee	ed regula	ition		Torque c	ontrol
ı	PRG che	ck (1	Setting po	oint	Test spec	stications (4)	Setting p	oint	Test spe-	cifications (5)		(3)
	rev/min	Control rod travel mm	·	rev/min 3	Control rod travel mm		rev/min 6	•	Control rod travel mm 8	i	Control rod travel mm 10		Control rod travel mm
			.										

Torque-control travel on flyweight assembly dimension a

mm

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

وا		elivery on ontrol lever p 40°C (104 F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting for Idle spee	Control
r	ev/min	cm ³ /-1000 strokes 2	rev/min 3	revimin 4	cm³/-1000 strokes 5	rev/min 6	rod travel cm ³ /1000 strokes / mm ··· 7
					,		
25							<u> </u>

En Checking values in brackets

40

VDT-WPP 001/4

20.11.65

En

PES 6 A 85 C 320 RS 2166

EP/RSV 250-1000 A2 B 330 R

supersedes

company

Volvo-Penta

engine

TD 5260

Testing with "B" leads !

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm (2)	cm ³ /100 strokes 3	100 strokes 4	mm 2	cm³/100 strokes	mm 6
	12	5,6 - 6,0	0,3			2,5 ± 0,1
1000	6 9	0,1 - 0,5 1,4 - 2,1				(max.2,2-2,9)
200	9	0,8 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	hate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm		que control Control rod travel mm
ca.37	1000 1050 1100	16,0 12,2 7,2		without auxilian spring with auxiliary spring			250 100	6	980 460	0 0
28	1100 1180 1300	4,8-8,7 1,1-3,1 0 - 1	1				250 350 450 550	5,7-6,3 3 -4,4 0 -2,2 0 - 1	320	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	III-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
Test oil te rev/min	emp 40°C (104°F) cm ³ /1000 strokes 2	Note changed to .) rev/min 3	rev/min	cm#1000 strokes 5	rev/min	cm¶1000 strokes 7	rev/min 8	Control rod travel mm	
900	57,0-59,0	1010-1030	500	50,0-53,0	100	mind. 10mmRW	250	6	
						•			

Checking values in brackets

* 1 mm less control rod travel than col 2

Reverse side of pump 32166 with governor B 330 \mbox{R}

Setting of low idle:

 $n = 250 = 5.5-11.5 \text{ cm}^3/1000 \text{ strokes (approx. 7 mm CRT)}$

Scatter max. 1.0 cm^3 ; given greater scatter, adjust initial tension of valve spring accordingly (Section A, Column 6)

High idle:

 $n=1070=9.5-14.5\ cm^3/1000\ strokes$ (approx. 7 mm CRT) Scatter max. 3.0 cm 3

Testing of shutoff device:

With the pump off and at n=60 or n=980 it must be possible to move the control rod with the stop lever from the starting and full-load position to CRT 0 (Stop).

Testoil-ISO 4113

4

VDT-WPP 001/4

En

PE 4 A 90 C 412 RS 2165

EP/RSV 200-1000 A1 B454 DL

 $\text{supersed} \varepsilon \, s$

EP/RSV 200-1200 A1 B455 DL

company Renault

test tubing

engine

124 V

Values apply to fuel-injection test tubing 1 680 750 015

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	ram 2	cm ³ /100 strokes 3	nım 6
	9	7,4 - 7,9	0,4			•
1000 ·	6 15	2,9 - 3,7 16,0 -17,3				
200	6	1,1 - 2,0				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

..A1 B 454 DL

Degree of deflectron of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	Intermediate rated speed 4 5 6			Lower rev/min 8	rated speed Control rod travel mm 9	3 to	rque control Control rod travel mm
ca.47	1010 1030 1050 1040 1100 1200	16,0 12,2 7,0 7,5-11,0 2,6-4,0 0 - 1	sprir	auxil [·]		ca.16 y	200 100 200 400 620	6,0 19 - 21 5,7-6,3 2,2-4,2 0 - 1	990 900 700 400	0 0,2-0,4 0,6-0,8 0,6-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		iel delivery aracteristics	Starting f	fuel delivery (5)	4a) Idle stop	
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min	cm \$1000 strokes	rev/min	Control rod travel mm
1000	72,0-74,0	1020	800 500	78,5-81,5 73,5-76,5	1030	1,9-3,9	200	6,0
						•		./.

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

The numbers denote the sequence of the tests

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		intermed			Control- lever -deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1 2	rque control Control rod travel mm	
ca.72	1220 1250	12,0 9,3	with	out au	vilia	ca.29	200	6,0	1200	0	4.8
	1280	6,3	spri		X 1 1 1 1 1 1	У	100	19 - 21	900	0,7-0,9	
29	1250 1320 1450	8,6-10,0 3,0-4,5 0-1	with spri	auxil ng	iary		200 450 680	5,7-6,3 1,3-3,8 0 - 1	500	1,1-1,3	.

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	il-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
	emp. 40°C (104°F) cm ³ /1000 strokes 2	Note. changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1200	73,0-75,0	1020	1000 800 500	71,5-74,5 78,0-82,0 73,0-77,0	100 200 1250	12,9-13,9 1,6- 2,2 2,4- 4,4	200	6,0	

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

En

^{* 1} mm less control rod travel than col. 2

40

VDT-WPP 001/4 Edition 19.8.65

En

PE 2 A 85 C 320/3 RS 2152 PE 3 A 85 C 320/3 RS 2146 PE 4 A 85 C 420/3 RS 2152

EP/RSV 250-750 A1 B438R

supersedes company

engine

Vendeuvre Z 2 P 56 Z 3 P 66

Z 4 P 76

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre tensioning (torque-control valve) rnm 6
700	9	4,6 - 5,3	0,4			
	6 15	2,0 - 2,8 11,6 -12,7				
200	6	1,7 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1 2 /	rque control Control rod travel mm
ca.36	750 770 800	16 12 5,2	with spri	out au	xilia	ca.17 ry	250 100 250	6 19 - 21 5,7-6,3	730 400	0
23	800	8,6-10,6 3,8- 6,6 1,8- 3,2	with auxiliary spring				350 450	2,2-3,6 0 - 1	300	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

C	li-load stop	6 Rotational- speed limitat		iel delivery naracteristics	Starting I				
rev/min	cm ⁹ /1000 strokes	Note changed to) rev/min	rev/min	cm 1000 strakes	rev/min	cm#1000 strokes		Control rod travel mm	
1	2	3	4	5	6	7	8	9	
			l I						
							ļ	İ	
								}	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Altemagne par Robert Bosch GmbH.

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding st	eeve travel
deflection	Control	Control rod travel		Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1
1 - 1 - 1 - 1 - 1	rodtravel mm	mm rev/min		of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1,	2	3	_	4	5	6	7	8	9	10	11
									•		
							(3a)				

Torque control travel a

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104 F) 2		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	rery characteristics 5a speed 5b	Starting Idle switchir	\mathcal{O}	Torque- travel	control 5
,		rev/min 4a	rev/min	cm ² /1000 strokes	rev/min	cm3/1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9
730 Z 3 P 730	56 PE 2 A 67,0-69,0 56 PE 3 A 73,5-75,5 76 PE 4 A	. S 2152 760 - 770 . S 2146 760 - 770 . S 2152	-	-	100	mind.20mmRW mind.20mmRW	250 250	6 6
Z 4 P 730	73,5-75,5	760 - 770	-	-	100	mind.20mmRW	250	6

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

Upper rated s	peed			Intermediate	ed	Lower rated	speed	Sliding sleeve travel			
		Control rod	(la)	Degree of deflection of control	l	Control rod travel	Degree of deflection of control		Control rod travel		1
of control lever		rev/min	(2a)	lever	rev/min	mm 4	lever	rev/min	mm (3)	rev/min	mm
1	2	3	_	4	5	6	7	8	9	10	11
							(3a)				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		intermediate speed	Fuel deliv high idle s	very characteristics 5a speed 5b	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/mមា.	cm ⁴ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col 2

40

VDT-WPP 001/4 Edition 1.10.64

En

PE 6 A 90 C 410 RS 2023

EP/RSV 250-1100 A1 B 173 D

supersedes

company

Lancia-Italien

engine

516,00

See page 2!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,0+0,1

mm (from BDC)

Tappet clearance at TDC min. 0.2 mm

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm²/100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
	15	13,5-14,3	0,5			
1000	6 9	2,3- 3,1 6,1- 6,8				
200	9	3,6-4,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

estoil-ISC

Degree of deflection, of control lever	r rated speed Control rod travel mm 2	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	1(5)	rque control Control rod travel mm
ca.57	1100 1140 1170	16 11,4 7	with spri	out au	uxilia	ca.23 ry	250 100 250	7,5 19 - 21 7,2-7,8	1080 1000 800	0,2-0,4
(2a)	1160 1200 1230 1320	6,2-10 3,2-5,3 1,0-3,8 0.3-1	with spri	auxi ing	liary		300 440 600	6,4-7 1,4-4,6 0 - 1	600 350	1,35-1,65

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limitat 3a Fuel delivery characteristics			Starting fuel delivery 5 4a Idle stop				
rev/min	emp 40°C (104 F) cm ² /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm¥1000 strokes 5	rev/min	cm\$1000 strokes	rev/min	Control rod travel mm 9	
1080	103,5-105,5	1110-1120	800 500	112,5-115,5 115,0-119,0					

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Checking values in brackets

* 1 mm less control rod travel than col 2



As opposed to VDT-WPP 001/4 - first supplement - the special setting is as follows:

0	1.	Governor-spring adjustment	corresponds to	(1)
	2.	Pre-adjustment of full-load delivery and noting down of control-rod travel	roughly corresponds to	(2)
	3.	Screw in torque-control retainer until control-rod travel is 1 mm more than that measured under 2.	roughly corresponds to	(3)
	4.	Final adjustment of full-load delivery by screwing back full-load stop screw	roughly corresponds to	(2)
	5.	Adjustment of breakaway	corresponds to	(6)
	6.	Testing of torque control and fuel- delivery characteristics	roughly corresponds to	(3) (3a)
	7.	Idle adjustment	corresponds to	(4)
	8.	Testing high idle Test starting fuel delivery and adjust with control-rod stop	corresponds to	(6a)

Please consult test instructions as regards information given in parentheses.

En

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VDT-WPP 001/4 Edition 20.2.68

En

PE 6 A 90 C 410 RS 2125 S 2229 EP/RSV 250-1100 A 1 B 205 DL 250-1150*

supersedes company

engine

23.6.64 Lancia 516 000 * 402 000

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings End of pump delivery

Port closing at prestroke

4,4+0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,9 - 6,5				
٠	6 12	2,0 - 3,0 9,5 -10,5				
200	9	3,0 - 4,0				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

250 - 1100 A 1 B 205 DL

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	Intermediate rated speed 4 5 6				rated speed Control rod travel mm	9	rque control Control rod travel mm
ca.60	1100 1140 1180 1170 1240 1340	16 12,2 7 6,0-9,8 1,0-3,8 0,3-1,0	sprin	- auxili		ca.25	250 100 250 330 450 550	6,0 19 - 21 5,7-6,3 3,5-4,7 0 -2,9 0 -1,0	600	0 0,4 - 0,6 0,6-0,8 0,6-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ili-load stop	speed limitat		iel delivery iaracteristics	Starting f	uel delivery 5	(4a) Idi	e stop
rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm [§] 1000 strokes 7	rev/min 8	Control rod travel mm
1080	113,5-116,5	1110-1180	800 500	113,0-117,0 112,0-116,0	100	15 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than coi 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50: 0-7000 Stuttgart 1: Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

B. Governor Settings

250-1150 A 1 B 205 DL*

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1()	rque control Control rod travel mm
ca.63	1150 1200 1240	16,0 10,8 5,6	with spri	out au ng	xilia	ca.25 ry	100	6,0	1130	0
29	1200 1250 1360	9,5-11,8 3,6- 5,8 0 - 1	with spri	auxil ng ,	iary		250 350 450 560	5,7-6,3 3,5-4,8 0 - 3 0 - 1	700 350	0,2-0,4 0,6-0,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ll-load stop imp. 40°C (104°F)	Rotational- speed limitat	speed limitet characteristics			uel delivery 5	4a idle stop	
	cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1130	101,5-104,5	1170	800 500	104 - 108 ·97 - 101	100	15 mm RW		
					-	,	ı	

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
	•		
	e		·
	ñ		

Notes

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

En

VDT-WPP 001/4 Edition 13.5.71

En

PES 6 A 75 C 320 RS1262 PES 6 A 75 C 320 RS1263

EP/RSV 350-750 A7B589R EP/RSV 350-1500 A2B589R (2) company

(1) supersedes

Saviem 597.50

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

S1263:

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
	9	4,7 - 5,1	0,3			
1000	6 15	1,9 - 2,6 10,4 -11,5				
200	6	0,9 - 1,8				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2	Control rod travel mm rev/min	Intermed	nate rated	speed	Control- lever deflection in degrees 7	_	rated speed Control rod travel mm	1637	rque control Control rod travel mm
ca.41	750 770 780	16,0 8,8 4,6 7,0-10,3	sprin	out aux ng auxil		ca.21 y	350 120 350 400	5,4 19 - 21 5,1-5,7 2,0-3,6	730 450 375	0 0 0,7-1,3
20	800 870	3,6-4,7 0-1	sprin		iai y		460	0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Ft	ill-load stop	6 Rotational- speed limitat	(3a) Fu	el delivery aracteristics	Starting f	uel delivery 5	(4a) Idi	e stop
Test oil to rev/min	emp 40°C (104°F) cm ³ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm 1000 strokes	rev/min	cm¥1000 strokes 7	rev/min 8	Control rod travel mm
730	54,0-56,0	760	500	51,5 - 54,5	100	mind.20	350	7,5-11,5
** Por 4.5-	t closing differ 5.5°camshaft.	rence betwee	n cont	rol-rod travel	9 mm a	nd 21 =		./.

Checking values in brackets

* 1 mm less control rod travel than col 2

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B. Governor Settings

(2)

	r rated speed Control rod travel mm		Intermed	ate rated	speed	Control- lever defiaction in degrees 7	Lower rev/min 8	rated speed Control rod travel rnm	rev/min	rque control Control rod travel mm
ca.52	1500 1550 1590	16,0 9,9 4,5	with spri	out au ng	xil ja	ca.16 ry	350 120	5,1	1480 500	0
28		3,5-9,8 1,7-3,5 0 - 1	with spri	auxil ng	iary		`350 450 540	4,8-5,4 1,0-2,9 0 - 1		0,7-1,3

C. Settings for Fuel Injection Pump with Fitted Governor

S	III-load stop		speed limitat. Characteristics			uel delivery 5	(4a) Idi	e stop
	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9
1480		1520	800	49,5-52,5	100	mind.20	350	7,5-9,5

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

Testoil-ISO 4113

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	dimil Control rod travel- diffe	nution rence
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	
		-		

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

En

^{* 1} mm less control rod travel than col. 2

VDT-WPP 001/4 Edition 3.71

PES 3 A 85 C 310 RS 1232

EP/RSV 250-1000 A1 B12L

supersedes

PES 4 A 85 C 410 RS 1232 EP/RSV 250-1000 A1 B1024L ../.

company engine

Lamborghini FL 1153 FL 1154

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,7+0,05

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/m _{in}	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
	9	5,8 - 6,3	0,4			
1000 -	6	2,3 - 3,5			<u></u>	
200	9	3,3 - 4,3				
	** Port 4.5-6	closing differ camshaft.	ence betwe	en control·	rod travel10.2	mmand 21 =

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

250-1000 A1 B12L

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3			Control lever deflection in degrees 7		rated speed Control rod travel mm 9	1(3)	rque control Control rod travel mm	
ca.55	1000 1060 1100	16,0 10,5 5,7	with spri	out au ng	ıxilia	ca.25 ry	250 100	6,0 19 - 21	980 400	0
2 a	1100 1150 1250	3,5-7,8 0,5-3,2 0,3-1,0	with spri	auxil ng	iary		250 300 450	5,7-6,3 3,7-4,8 0 -1,0	300	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(4)	II-load stop emp 40°C (104°F)			el delivery aracteristics	Starting fuel delivery 5		(4a) Idle stop	
rev/min	cm ³ /1000 strokes 2	rev/min	rev/min 4	cm∳1000 strokes 5	rev/min 6	cm 1000 strokes 7	rev/min 8	travel mm 9
1000	78,5-80,5	1020						
								./.

Checking values in brackets

* 1 mm less control rod travel than col. 2

The numbers denote the sequence of the tests

B. Governor Settings

250-1000 A1 B1024L

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermed	diate rated		Control- lever deflection in degrees 7	Lowe rev/min 8	r rated speed Control rod travel mm	rev/min	rque control Control rod travel mm
ca.55	1000 1050 1100	16,0 10,7 6,0	3 .	without auxilia			250 100	6,0 19 - 21	1000	0
20	1070 1120 1220	8,0-11,0 2,5- 5,5 0 - 1	spring with auxiliary spring			250 350 440		0 1,2-1,8		

C. Settings for Fuel Injection Pump with Fitted Governor

S	II-load stop	6 Rotational- speed limitat	speed limitat Characteristic			ruel delivery 5	da Idle stop		
Test oil te rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note. changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min	Control rod travel mm	
1000	68,5-70.5	1020							

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel	diminution difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)	

Hotes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

En

^{* 1} mm less control rod travel than col 2

40

VDT-WPP 001/4 Edition 10.73

En

PES 3 A 65 C 410 RS 1185 EP/RSV 250-750 A7B555 EP/RSV 250-900 A7B555 EP/RSV 250-1500A8B555 EP/RSV 250-1800A0B..

supersedes company engine 6.70 Hanomag D 132 HG 1-3 D 142 HG 4-6

D 162 HG 7-9

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning itorque-control valve) mm 6
	12	4,3 - 4,7	0,4			
1000	9 18	2,0 - 2,6 8,2 - 9,1				
200	9	1,4 - 2,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

estoil-ISO 411

250-750

	r rated speed Control rod travel mm	Control rod travel mm rev/min		diate rate		Control- lever deflection in degrees	rev/min	rated speed Control rod travel mm	1(3)	rque control Control rod travel mm
ca.47	750 780 810	16,0 11,6 5,4 5,0-9,0	*	5	[6	ca.22	250 100 250	6,0 19 - 21 5,7-6,3	730 300	0
28	850 920	1,4-3,0 0,3-1,0	**		- to development as a		350 420	0,5-3,0		

250-900

ca.60	900 940	16,0 11,4	ca.25 * without auxiliary	250 100	6,0 19 - 21	880	0
	970 940	6,8 10 - 12	spring	250 320	5,7-6,3 2,6-4,2		
	1000 1100	2,0-4,2 0,3-1,0	<pre>** with auxiliary spring</pre>	450	0 - 1		

B. Governor Settings

Upper rated sp	peed		Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve travel
deflection	Control rodtravel	travel	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel		(1)
1	2	3	4	5	6	7	88	9	10	11
250-150 ca.73	1500 1550 1590	9,6 4,7 11,4-13,4 3,0- 5,0	without spring with au spring		_	ca.20	250 150 250 350 520	6,0 19 - 21 5,7-6,3 3,0-4,3 0 - 1	1480 300	0 1,2-1,8

Torque control travel a «

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	stop	Rotational speed (2b) limitation intermediate speed	Fuel deliv high idle s	rery characteristics 5a speed 50	Starting to the switchir		6 Torque travel	Control rod
rev/min	cm ⁴ 1000 strokes	rev/min da	tev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/mir	travel
1	2	3	4	5	6	7	8	9
880	57,0 - 59,0	910				1		1800
1480	57,0 - 59,0	1520				2	2400	3000
1780		1820] 	3600	
880	57,0 - 59,0	910				4	D142	HG 1800
1480	57,0 - 59,0	1520				5	240	0-3000
1780		1820			:====	=========	360	0 =======
880	57,0 - 59,0	910				7	D16	2H0 0-1800
1480	57,0 - 59,0	1520				8	240	0-3000
1780	-	1820				9	360	0

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten	elivery I stop Ip 40°C (104°F) 2	Rotational-speed 2b inmitation intermediate speed	Fuel delive high idle s	very characteristics 5a speed 5b	Starting Idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strakes	rev/min (4a)	rev/min	cm ³ /1000 strokes		cm ⁴ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than coi 2

WPP 001/4

PE 4 A 80 B 410 S 311 C 410 RS1085 RQ 250/1125 A 242 d AA 242 D EP/RSV 250-750 A7B310 200-925 A1 B293 supersedes

company engine

Steyr WD 413 C

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5				
	6 15	1,2 - 2,0 10,3 -11,4				
200	9	2,9 - 3,7				
•						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

Checkin PRG che rev/min 1	g of slider ck Control rod travel mm 2	Full-load s Setting po rev/min 3	•	•	rev/min	Idle spec Setting p rev/min 7	Control rod travel	Test spe	cifications 5 Control rod travel mm		Control rod (3) travel mm
1000	14,3-15,1	1000	14,7	1125 1140 1160 1180 1240	14,2-14,7 10 -14,7 5 -12 0 -8 0		0	150 250 300 350 430	3,8-5,4	1	16 - 17 15,4-15,8 14,8-15

Torque-control travel on flyweight assembly dimension a =

0,4

Speed regulation. At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	2	Control rod stop 3a		Fuel delivery characteristics			Starting fuel delivery Idle speed Control			
rev/min	cm ³ /-1000 strokes		rev/min		rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	rod travel cm ³ /1000 strokes:/ mm 7		
1000	71,0-73,0		C, cól.7		500 800 1100	71,0-74,0 70,5-73,5 mind.70,5		100	10,4 - 11,4		

Checking values in brackets

1.12.71

B. Governor Settings

	tion travel travel travel travel travel mm mm rev/min 2 3		Intermediate rated speed 4 5 6		Control- lever deflection in degrees 7	· Lower rev/min 8	rated speed Control rod travel mm	(2)	rque control Control rod travel mm	
ca.54		16,0 11,8 6,4 9,2-11,4 5,7- 9,4 0,3- 1,0	*			ca.25	250 100 150 250 320 450	6 19 - 21 11,5-21 5,7-6,3 2,6-4,2 0 - 1	880 100 290	0 0 1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil te	emp. 40°C (104°F) cm³/1000 strokes	Rctational- speed limitat. Note: changed to) rev/min	el delivery aracteristics cm ³ /1000 strokes 5	Starting f Idle rev/min 6	uel delivery 5 cm ¹ /1000 strokes	rev/min	e stop Control rod travel mm 9
750	73,5 - 75,5	770				250	6

Checking values in brackets

* 1 mm less control rod travel than col 2

B. Governor Settings

200-925 A1 B293

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1(3)	rque control Control rod travel mm
ca.59	925 1000 1080	16,0 11,3 4,2		thout	auxil	ca.29 iary	100	6,0 19 - 21 5,7-6,3	900 400	0
2a	1000 1100 1220	10 - 12 1,5-2,7 0 - 1		th aux ring	(iliar	у	200 300 430	2,2-4,0	350	1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

2b Ft	ill-load stop	6 Rotational- speed limitat.	3 Fu	el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
925	78,5-80,5	940			100	10,4-11,4 (16,4-17,0 mmRW)			

Checking values in brackets

* 1 mm less control rod travel than col 2

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4

Edition 22.11.68

RQ 250/1200 A 411 d (AV 5859d)

supersedes

company engine

FBW

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

2.65 + 0.1

A. Fuel Injection Pump Settings

PE 6 A 85 B 410/3 RS 2019

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,9 - 5,5	0,4			
	6 15	1,3 - 2,1 12,3 -13,1	,			
200	9	3,9 - 4,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider ck	Full-load s Setting po	•	•	cifications (4)	ldle spec Setting p	_		cifications (5)	Torque o	control 3
rev/min	Control rod travel mm 2		Control red travel rnm 4	Control rod travel rnm 5	rev/min	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel mm 10	rev/min 11	travel
600	15,7-16,3	600	16,0	1200 1220 1250 1300 1340	14,4-14,9 10,5-14,7 4,0-11,0 0 - 4,8 0		0	200 250 300 400 460		1050	1,60 15,6-15,9 15,2-15,5 14,8-15,1

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever	Control rod stop 3a	Fuel delivery characteristics			Starting for	
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	Control red travel cm ³ /1000 strokes:/ mm
1180	60,5 - 62,5	500	-	-		-	-

Checking values in brackets

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.

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WPP 001/4

PES 6 A 85 B 412 RS 461 RS 2046

RQV 200/600-800/1100 AA474D

supersedes

company MAN

engine.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /190 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,9 - 5,5				
	6 15	1,3 - 2,1 12,3 -13,1				
200	9	3,9 - 4,4	·			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

deflection	rev/min Control rod travel mm	Control rod travel mm re in 3	(3º) (28)	rev/min	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	Sliding s rev/min 10	mm
ca.62	850 900 1000 1100 1160 1200 1290	14,8- 1 14,8- 1 15 14,8-1 8 -13 3 - 9	15,2 5,2			ca.10	100 200 300 500 600 720	6,6- 8 4,2-6,5 3,6- 4 3,6- 4 2,4- 4		0 0,4-0,6 0,9-1,1

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F)		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a	Starting Idle switchin	0	Torque- travel	Control (5)
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5 ·	6	7	8	9
1080	94,0-96,0	1110-1120	600 1100					

Checking values in brackets

* 1 mm less control rod travel than col. 2

8.11.63

VDT-WPP 001/4

Er

PE 12 A 90 B 520 RS 466

RQV 200/750-1150 AA 502 D

supersedes

company

K H D

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	9	5,9 - 6,4				
	6 15	1,4 - 2,2 14,6 -15,8				
200	9	3,9 - 4,9				·

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 3	(a) (2a)	Intermediate Degree of deflection of control lever	rated speries rev/min	Control r travel mm	od	Lower rated Degree of deflection of control laver 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
ca.68	1150 1200 1250 1300 1380	15 -18 10 -14 4,5-10 0 - 6 0	, 5	ca.43	650 750 800 900 970	5,0- 2,0- 0 -	11 5,1 1,9	5	100 200 300 500 700 780	6,3-8,0 4,9-7,0 3,6-4,5 3,6-4,0 3,6-4,0	900	0 0,4-0,6 0,7-0,9 0,9-1,1

Torque control travel a = 1,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

1	1 stop np 40°C (104°F) 2		Fuel delivingh idle s	rery characteristics (5a)	idle switchir	fuel delivery 6	Torque- travel	Control 5 Control rod travel
rev/min	cm ³ /1000 strokes	3	4	5	6	7	8	9
10,5	1160-1170							

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

②

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 BOR 5,0 g

Edition 8.64

PE 4 A 70 B 412 RS 474

RQ 250/1425 A 356 D A 459 D supersedes company

engine

20.7.60 Borgward D 6 M 5 II D 4 M 3,3 II

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

PE 4 A

1.0 + 0.1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,5 - 7,0	0,3			
000	6 18	1,2 - 1,9				
200	6	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider ck Control rod	Full-load s Setting po	-	-	cifications	4	Idle spee Setting p	_		cifications 5	Torque d	Control rod
rev/min	travel	rev/min 3	rod travei mm 4	red travel mm	rev/min 6		rev/min 7	rod travel	rev/min 9	travel mm 10	rev/min 11	travel mm 12
1350	14,6-15,4	1350	15	1425 1440 1460 1480 1550	14,8- 11,4- 5,6- 0- 0	15	510	0	100 150 250 350 410	6,4-8,1 5,8-7,9 3,8-6 0,5-2,8 0	ł .	16 -16,3 15,7-16 15,4-15,7 15 -15,3

Torque-control travel on flyweight assembly dimension a =

ひ,づ mm

Speed regulation. At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever op. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rod travel ∪.⊐³/1000 strokes / mm 7	
1400	53,0 - 55,0	400	11:00 700 400	52,0 - 55,0 54,5 - 57,5 50,0 - 54,0	100	mind. 16mmRW	

Checking values in brackets

4

WPP 001/4

En

PE 6 A 75 B 410/3 LS 479

EP/RSV 300-900 A7A 372 d

supersedes company

engine

MWM

Cam sequence and angular spacing:

1 - 2 - 3 - 5 - 4 6

45 - 75 - 45 - 75 - 45 - 75

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rud travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
1000	9	3,2 - 3,7				
	6 15	0,9 - 1,7 8,5 - 9,5	0,2			
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in ${f E}$

B. Governor Settings

estoil-iSO 41

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rated	speed	Control- lever deflection in degrees	Lower	rated speed Control rod travel mm	1(3)	rque control Control rod travel mm
1	2	3	4	5	6	7	8	9	10	11
ca.62	900	16	ما 4 د	ot. o	v - 1	ca.29	300	7,5	880	0
	940 970	11,6 7,4	spri	out au ng	XIIIa	У	100 300	19 - 21 7,2-7,8	700 600	0,5-0,7
29	960 1000 1040 1150	7 - 10,4 3 - 6 1,2-4 0,3-1	with spri	auxil ng	iary		400 500 650	4,6-5,9 0 -3,9 0 - 1	500 350	0,9-1,1 1,0-1,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp=40°C (104°F)	Rotational- speed limitat		rel delivery laracteristics	Starting f	uel delivery 5	4a) Idle stop		
rev/min	cm ^{\$} /1000 strokes	changed to) rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min	cm\$1000 strokes	rev/min 8	travel mm 9	
10,5	910 - 920							·	

Checking values in brackets

* 1 mm less control rod travel than col 2

23.9.63

WPP 001/4

En

PE A 85 B 320 LS 496

EP/RSV 400-1900 A 0 A 101

supersedes

Krupp

Tappet clearance at TDC min. 0,3+0,05

company engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

	Control rod travei	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm3/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	9	3,8 - 4,3	0,3			
200	6 12 9 21	0,5 - 1,2 6,4 - 7,4 1,1 - 1,9 10,6 -12,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

estoil-ISO 41

(1) Uppe	r rated speed		Interme	diate rated	speed	(4)	Lower	rated speed	(3) Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
ca.56	1900 1980				kiliar	ca.21	400 200	6	1880 1700	0
29	2080 1900 2000 2080 2300	6,1 15,7-16,2 10 -12 3,8-8 0.3-1	sprin with sprin	auxil	iary		400 500 600 750	5,8-6,2 3,7-4,9 0,8-3,2 0 - 1	480	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting t	Starting fuel delivery 5 4a idle stop		
Test oil te rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm\1000 strokes	rev/min 6	cm [#] 1000 strokes 7	rev/min 8	Control rod travel mm
1880	92,0 - 94,0	,			100	RW 21		

Checking values in brackets

* 1 mm less control rod travel than col. 2

21.8.61

BOSCH

WPP 001/4

PE 6 A 75 B 321 RS 498 with altitude stop

EP/RSV 250-1425 A 2 A 104

supersedes

Perkins

company engine

B 340

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,25 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	0	4,7-5,1	0,4			
•	6 15	1,9 - 2,6 10,4 -11,5			``	
200	6	0,9 - 1,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm
ca.60	1425 1520 1590 1500 1600 1660 1730	16 9,8 4 9,8-12 2,5-5,3 0 - 2,8	spri	auxil		ca .22 ry	250 150 250 400 450 550	6 19 - 21 5,8- 6,2 1,1- 3,4 0 - 2,4 0 - 1		0 0 1,2 - 1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	6 Rotational- speed limitat		iel delivery aracteristics	Starting i	uel delivery 5	(4a) Idi	e stop
rev/min	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm¥1000 strokes 5	rev/min	cm\$1000 strokes	rev/min 8	Control rod travel mm
1400	54,5 - 56,5	without alt	i tude	stop				
1400	52,5 - 54,5	with altitu	de st	p			•	

Checking values in brackets

* 1 mm less control rod travel than col 2

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40

WPP 001/4

En

PES 4 A 85 B 410 RS 503

RQ 250/1200 A 387 d

supersedes

company:

Saurer-A

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 109 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,6				
	6 15	0,1 - 0,8 11,4 -12,6				
200	9	3,1 - 4,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che		Full-load speed regulation Setting point Test specifications (Idle speed regulation Setting point Test specifications (5)				Torque control		
rev/min	Control rod travel mm	rev/min	Control rod travel mm	Control rod travel mm	rev/min	rev/min 7	Control rod travel mm 8	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
550	15,6-16,4	550	16	1200 1220 1240 1340	14,1-14,3 14,0-14,2 10,0-14,0		0	100 200 300 390	5,4-7,4 3,9-6,1 1 -3,6 0	70C 800 900 1000	15,8-16,0 15,4-15,8 15,0-15,4 14,6-15,0	

Torque-control travel on flyweight assembly dimension a =

Testoil-ISO 4113

0,55_{mm}

Speed regulation. At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery idle speed Control		
rev/min	cm³/-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes:/ mm 7	
1180	65,5 - 67,5	500	800 500	57,5 - 60,5 51,5 - 54,5	100	mind.13 mm RW Idle 6 mm RW	

Checking values in brackets

26.7.63

Test Specifications Fuel Injection Pumps 2 and Governors

HAN 2,8 a5

PE 4 A 65 B 310 LS 531 1002 546 RQ 300/1400 A 384 d 399 d 384

supersedes Hanomag company D 28 KL engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

RW 9

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery cm³/100 strokes	Spring pre-tensioning (torque-control valve)
4000	2	3	4	2	3	6
1000	12	5,7 - 6,2	0,3			
	6	1,4 - 2,1				
200	6 21	0,8 - 1,6 7,6 - 8,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin		Full-load s	•	-	cifications		Idle speed regulation Setting point Test specifica			cifications (5)	Torque o	que control	
rev/min	Control rod travel mm 2	rev/min 3	Control rod travel rmm	Centrol rod travel rnm 5	rev/min 6	,	rev/min 7	Control rod travel rmm 8		Control rod travel	rev/min 11	travel	
1350	13,8-14,4	1350	14,1	1400 1420 1450 1470 1530	13,8-14 10 -1: 2,5 -1: 0 -7 0	3,8 0	300	0	250 300 350 400		800 1000	15,5-15,9 13 -13,4 14,4-14,9 14,1-14,4	

Torque-control travel on flyweight assembly dimension a =

estoil-ISO 4113

Speed regulation. At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever ap. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 36	Starting fuel delivery Idle speed		
rev/min	cm³/-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:// mm 7	
1380	44,0 - 46,0	750	750 500	45,0 - 48,0 44,5 - 47,5	100	mind. 20 mmRW	

Checking values in brackets

15,2.62

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②

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 HAN Edition 6.66

En

PE 4 A 65 B 310 LS 1002

RQ 300/1400 A 441 D

supersedes

10.64 Hanomag

company engine

D 28 KL

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,3+0,1

mm (from BDC)

RW 9

Control rod travel mm 2	cm ³ /100 strokes	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
12	5,7 - 6,2	0,3			
6	1,4 - 2,1				
6 21	0,8 - 1,6 7,6 - 8,9				
	travel mm 2 12 6	mm cm ³ /100 strokes 3 12 5,7 - 6,2 6 1,4 - 2,1	travel cm ³ /100 strokes cm ³ / 100 strokes 4 cm ³	travel * cm³/100 strokes 2 cm³/ 100 strokes 4 travel mm 2 12 5,7 - 6,2 0,3 6 1,4 - 2,1	travel cm ³ /100 strokes cm ³ /100 strokes cm ³ /100 strokes mm cm ³ /100 strokes 2 cm ³ /100 strokes 3 cm ³ /100 strokes 3

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Checkin	g of slider	Full-load s	peed re	gulation							control
١	PRG che	(1 /	Setting po	int	Test spec	cifications (4)	Setting p	ioint	Test spe	cifications (5)		(3)
		Control rod travel		Control rod travel	Control red travel			Control rod travel		Control rod travel		Control rod
-	rev/min		rev/min	mm		rev/min	rev/min		rev/min		:	mm
	1	2	3	4	5	6	7	8	9	10	11	12
	1350	14,4-15	1350	14,7	1400 1410 1440 1460 1520	14,4-14,7 11,8-14,6 4 -12 0 -8,4 0		0	200 300	7,2-8,1 3,6-6,0	450 800 1000 1200	16 -16,2 15,8-16 15,2-15,6 14,7-15
ļ												

Torque-control travel on flyweight assembly dimension a =

),4

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting 1	fuel delivery ed Control
rev/min	cm ³ /-1000 strokes	rev/min	rev/min 4	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes:/ mm
1380	43,5 - 45,5	750	750 500	44,0 - 47,0 42,0 - 45,0	100	mind. 20mmRW

Checking values in brackets

BOSCH

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Test Specifications Fuel Injection Pumps (1A) and Governors

VDT-WPP 001/4 HAN2,8a6 Edition 10.64

PE 4 A 65 B 310 LS 531

EP/RSV 300-600-1400 A5A131D

19.1.62

company engine

Hanomag D 28 KL

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,3 + 0,1

mm (from BDC)

RW 9

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm³/100 strokes	cm³/ 100 strokes	mm	cm ^{\$} /100 strokes	mm
1	2	3	4	2	3	6
1000	12	5,7 - 6,2	0,3			·
	6 6	1,4 - 2,1 0,8 - 1,6				
200	21	7,6 - 8,9				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

estoil-ISO 4113

(1) Uppe	rated speed		Intermed	liate rated	speed	(4)	Lower	rated speed	3 Torque control		
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel	
of control lever	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm	
1 .	2	3	4	5	6	7	8	9	10	11	
ca.65	1400	16			• • •	ca.22	300	6	1380		
	1450 1500	12,2 7,6	with spri	out au ng	xılıa	ry	100 300	19 - 21 5,7-6,3	700	0,3-0,5 0,8-1,0	
	1480 1500	8 - 1 1 5 - 9		aux il	iary		400 500	5 - 6 1,5-3,7	400	1,1-1,3	
(2a)		0,6-3,3 0 - 1	spri	ng			700	0 - 1			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a Idle stop	
rev/min	cm\$/1000 strokes	Note. changed to) rev/min 3	rev/min	cm\$1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm
1380	43,5-45,5	1410-1430	750 500	44,5 - 47,5 44,0 - 47,0	100	20 mm RW		
:	G G			 				

Checking values in brackets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps (A) and Governors

VDT-WPP 001/4 HAN 2,1 h
Edition 10.64

En

PE 3 A 65 B 410 LS 1039

EP/RSV 250-1150 A 1 A 156 D

supersedes

13.4.62

company

Hanomag

engine

D 21 CR 336

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,3 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm²/100 strokes	cm³/ 100 strokes 4	mm 2	cm ³ 100 strokes	mm 6
1000	12	5,7 - 6,2	0,3			
	6 18	1,4 - 2,1 9,7 -10,6		A so ou		
200	6	0,8 - 1,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

\mathbf{R}^{\bullet}	r rated speed Control rod travel mm 2			iate rated	speed	Control lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1 3	rque control Control rod travel mm
ca.65	1150 1180 1210 1180 1220 1350	12 9 5,5 8 - 10 3,6- 6 0 - 1	spri	auxil		ca.28 ry	250 100 250 350 450 600	6 19 - 21 5,7-6,3 3,3-5 0 - 3 0 - 1	1130 1000 800 300	0 0,5-0,7 1,2-1,4 1,2-1,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	Pb Full-load stop st oil temp 40°C (104°F) Rotational- speed limitat			uel delivery naracteristics	Starting I	Starting fuel delivery 5 4a Idle stop			
	cm ³ /1000 strokes	note chang 1 to) rev/min 3	rev/min	cm\$1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm	
1130	42,0-44,0	1160-1180	750 500	47,5 - 50,5 46,5 - 49,5					

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps (A) and Governors

4

VDT-WPP 001/4 MB 1,7 i 4 Edition 11.68

En

PES 4 A 50 C 410 RS 1010

EP/RSV 250-1625 A 2 B 60 (V 6841) supersedes 2.64 (DAI 1,7 i 4)

A 2 B 433 L*

engine OM 636

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	2,2 - 2,7	0,2			
	9 18	0,8 - 1,4 4,5 - 5,2				
200	9	0,6 - 1,1				
		_				·

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed		Intermed	diate rated	speed	(4)		rated speed	(3)	rque control
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel
of control lever	mm	mm rev/min				deflection in degrees	rev/min	rnm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1625 1680	12 7,8	without auxilia			ca.24	250	6	1600	0
	1720	4,8	spri		X 11 10	y	100	19 - 21	500 300	0 1,2-1,8
	1680	7 - 8,5	1 .	auxil	iary		250 350	5,7-6,3 3 -4,5		,,- ,,-
2 a		5 - 7,2 2,4- 4 0 - 1	spri	ng 			450 550	0 -2,5 0 -1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat	et delivery aracteristics	Starting fuel delivery 5			Idle stop		
rev/min	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm∳1000 strokes 7	rev/min 8	travel mm 9	
1600 1600	30,7 - 31,7 28,2 - 29,2	1630-1650	1000	27,7 - 29,7					

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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estoil-ISO 41

Testoil-ISO 41

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 DAI 1,8 d 1 Edition 2.64

En

PES 4 A 50 B 410 RS 50

EP/RSV 250 - 775 A 4 A 60 B 60 supersedes 1.5.61

company.

Daimler-Benz OM 636 VI-E

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.7 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travet mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	12	2,2 - 2,7	0,3			
-	9 18	0,8 - 1,4 4,5 - 5,2				3
200	9	0,6 - 1,1				·

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control rod travel	Control rod (1a	Intermediate Degree of deflection of control	rated sp	ced Control rod travel	Lower rated Degree of deflection of control	speed	Control rod travel	Sliding s	leeve travel
1.		rev/min (28	lever	rev/min	mm 4	lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	8	10	11
ca.44	850	16 10 6 7,2-10,2 3 - 5 1,2-2,9 0 - 1	withou spring with a spring	x i l ia	l iary ry	ca.21	250 100 250 300 350 450	6 13 - 21 5,7-6,3 4 - 5 1 -3,5 0 - 1	750 400 300	0 0 1,2-1,8

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel delivery characteristics 58 high idle speed 56		Starting idle switchir		Torque- travel	control 5
rev/miñ	cm³/1000 strokes	rev/min de	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
750	28,2-29,2	780 - 790						

Chucking values in brackets

* 1 mm less control rod travel than col. 2

②

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 KRU 7,2g Edition 2.64

Εn

PE 5 A 85 B 320 LS 553

RQ 400/1900 A 407 D

supersedes 6.10.61 company. Krupp

ngine: D 573

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4.8 - 0.1

mm (from BDC)

RW 9

Rotational speed reviewn	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	4,5 - 4,9	0,4			
	6 12	2,2 - 3,0 8,9 - 9,5				
. 200	9 21	2,6 - 3,4 14,9 -17,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin		Full-load s	•			Idle speed regulation Setting point Test specifications (5)				Torque control		
rev/min	Control rod travel mm 2	rev/min	Control rod travel mm 4	Control rod travel rnm 5	rev/min	rev/min	Control rod travel mm 8		Control rod travel mm 10		Control rod travel mm 12	
1850	13,8-14,6	1850	14,2		10 -14,2 5,4-13 0 - 8,2	730	0	300 400 500 630	6,1-8,1 4,4-6,5 1,8-4,2 0	700 900 1100 1300	15,6-16,1 15,2-15,6 14,8-15,2 14,2-14,6	

Torque-control travel on flyweight assembly dimension a =

0,55

Speed regulation At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting for	
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /~1000 strokes 5		rev/min 6	Control red travel cm ³ /1000 strokes: / m m 7
1850	91,5 - 92,5	1200	1200 1500 1900	87,5 - 89,5 89,0 - 91,0 mind. 91,5			

Checking values in brackets

F16

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. c. 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 Edition 12.65

En

PE 4 A 60 C 310 LS 1064

RQV 250-1000 AA 970

supersedes

company

Hanomag

engine.

D 28 R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,1 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	4,5 - 5,0	0,3			
	6 18	0,6 - 1,2 8,3 - 9,1				
200	6	0,1 - 0,9	s			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection of control	rev/min Control rod travel	Control rod (12 mm rev/min 22	of control		Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
66 <u>+</u> 1,5	1020 1040 1080 1140 1210	15 - 18 12,4-16,2 7,6-12,8 0 - 7,2		_	-	10 <u>+</u> 1,5	150 250 450 550 680	6,2-8 4,7-7 2,8-3,8 1,2-2,5 0	650	0 0,1-0,3 0,3-0,5 0,4-0,6

Torque control travel a = 0,5 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-red Test oil ten			The state of the s		Starting Idle switchin		Torque- travei	control 5
rev/min	cm³/1000 strokes	rav/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	38,5-40,5	1010-1030	750 450	39,5 - 42,5 38,0 - 41,0				

Checking values in brackets

* 1 mm less control rod travel than col. 2

①

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 Edition 12.65

En.

PE 4 A 75 C 420 RS 1063

ROV 250-825 AB 78R

supersedes

company engine Hanomag D 57 R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	9	2,8 - 3,4	0,4			
	6 1 5	0,6 - 1,1 8,3 - 9,3				
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rev/min Control rod travel mm	mm <	Intermedia Degree of deflection of control lever	i i	Control rod travel mm 4	Lower rated Degree of deflection of control tever 7	rev/min	Control rod travel mm 3	Sliding s rev/min 10	mm
65±1,5	825 840 880 920 960	14,8-17,4 12 -15,4 5 -10,2 0 - 5,4	•	-	••	10 <u>+</u> 1,5	100 200 300 400 580	7,4-8 6 -8 3,6-4,8 2,2-3,8 0		

Torque control travel a =

mr

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten			Fuel deliv	very characteristics (5a)	idie	fuel delivery 6	Torque-control (5	
(ev/min	cm³/1000 strakes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1 .	2	3	4	5	6	7	8	9
650	93 - 95	830 - 840						•

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps 1 and Governors

PE 6 A 65 B 412 RS 1059

RQV 250/600-900/1275 AA 472 D

supersedes

MAN

)

company engine.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0 - 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fual delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,8 - 4,2	0,3			;
	6 15	1,1 - 1,8 5,8 - 6,5				
200	6	0,6 - 1,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 41

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Slidings	leeve travel
deflection	rev/min Control rod travel	Control rod travel	(1a)	Degree of deflection of control	:	Control rod travel	Degree of deflection of control		Control rod travel		0
		rev/min	(2a)	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
62 <u>+</u> 1,5	1000 1250	17,6-23 14,8-15 14,8-15 12,8-15 3,6-9 0	,8 ,2				10 <u>+</u> 1,5	100 200 400 600 700 760	7 - 8 5,5-7,6 3,6-4 2 -4 0,3-1,8	900 750 600	0 0,3-0,5 0,7-0,9
		0.0					3a				

Torque control travel a =

0.8 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b ilmitation intermediate speed	Fuel delivingh idle s	very characteristics 5a speed 56	Starting Idle switchii		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9

Checking values in brackets

* 1 mm less control rod travel than col 2

11.6.63

①

estoil-ISO 4113

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4

En

PE 6 A 65 B 412 RS 1059

RQV 250/600-900/1350 AA 472 D supersedes

company M A N

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.0 - 0.1

mm (from BDC)

Rotational speed rev/min	Control rog travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,8 - 4,2	0,3			
	6 12	1,1 - 1,8 5,8 - 6,5				
200	6	0,6 - 1,3			·	

Adjust the fuel delivery from each outlet according to the values in ____

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control	Control rod travel	(18)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		ı ①
of control lever	rod travel mm	mm rev/min	28	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
62 <u>+</u> 1,5	1000 1300 1380	17,8-23 14,8-15, 14,8-15, 12 -15, 2,5 - 8,	,2				10 <u>+</u> 1,5	100 200 400 600 700 770	6,4-8 5,5-7,6 3,6-4 2 -4 0,2-2 0	900 750 600	0 0,4-0,6 0,7-0,9

Torque control travel a =

0,8 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics (5a)	Starting Idle switchir	$\mathbf{O}_{\mathbf{I}}$	Torque- travel	Control 5 Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
						•		

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.6.63

Test Specifications Fuel Injection Pumps (A) and Governors

40

VDT-WPP 001/4 Edition 1.12.65

En

PES 4 A 70 B 120 RS 168 PES 4 A 70 C 320/3 RS 1056 EP/RSV 300-1050 A1 A11 EP/RSV 300-1050 A1 B11 supersedes company

Hürlimann

engine

All test specifications are valid for Bosch Fuel injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm\$100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,8 - 4,3	0,3	T.		
	6 12	1,2 - 2,3 6,5 - 7,0				
200	6	0,5 - 1,3				

Adjust the fuel delivery from each outlet according to the values in [

**

estoil-ISO 41

B. Governor Settings

	r rated speed Control red travel mm		intermed	liate rated		Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3)	rque control Control rod travel mm 11
ca.	1050 1100 1130	16 10,3 6	witho sprin	ut au) ig	kiliar	ca.25 y	300 100	6 19 - 21	1030 500 340	0 0 1,2 - 1,8
28	1100 1150 1200 1250	8,4 - 12 2,4 - 5,8 0,3 - 2,2 0,3 - 1	with sprin	auxil [°] Ig	iary		300 350 400 450	5,7-6,3 3,6-4,5 0,4-2,8 0 - 1		,

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ili-load stop	Speed limital Characteristics			Starting fuel delivery 5 4a Idle Stop				
Test oil to	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm#1000 strokes	rev/min	Control rud travel mm 9	
1030	41,75-43,75	1060-1080	100	mind.	100	mind. 20 mm RW			
** ! 8° ±	ort closing dif 0,5° camshaft.	ference betw	veen c	ontrol-rod trave	1 9 mr	n and 21 =			

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuffgart 1. Printed in the Federal Republic of German, imprime en Republique Federale d Allemagne par Robert Bosch GmhH.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4

En

PES 3 A 70 C 320 RS 1045

EP/RSV 250-1050 A1B 314

supersedes

company

Valmet

engine

310 D

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.9 + 0.1

mm (from BDC)

		190 . 091				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Centrol rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,5 - 7,0	0,4			
	6 18	1,2 - 1,9 10,9 -11,9				
200	6	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection of control	rev/min Control rodtravel	Control rod travel mm rev/min 2a	of control	rated sp rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm 3	Sliding s rev/min 10	mm
ca.58	1090 1100 1160 1100 1150 1200 1250	16 11 4 10 - 12,3 3 - 7 0 - 3 0 - 1	without spring with au spring			ca.25	250 100 250 300 350 450	6 19 - 21 5,7-6,3 4 - 5 1 -3,5 0 - 1	1030 420 300	0 0 1,2-1,8

Torque controi travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv		Starting Idle switching		Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min 8	travel mm
1030	48,0 - 50,0	1060-1080	-	-			n 250	

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel injection Pumps (1A) and Governors

VDT-WPP 001/4 KHD 5,3 z 4 Edition 7.74

En

PE 4 A 75 C 420 LS1036 PE 6 A 75 C 420 LS1036 EP/RSV 300-1000 A7B261DR

EP/RSV 300-1000 A73261DR

supersedes company

KHD

F 4 L 514 F

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm\$100 strokes	mm 6
1000	12	6,2 - 6,6	0,3			
	9 15	3,0 - 3,7 8,5 - 9,5				
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Testoil-ISO 4113

EP/RSV 300-1000 A7 B261D

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermed	diate rated	speed 6	Control lever deflection in degrees 7	rev/min	rated speed Control rod travel mm 9	1(3)	rque Control Control rod Iravel mm
ca.72	1000 1040 1020	16,0 11,0 6,4	withous spring	out aux	xiliar	са.28 У	300 100 300	6,0 19 - 21 5,7-6,3	PE 4 400	A: 1,0-1,2
28	1050 1100 1200	8,0-10,6 1,8- 4,0 0 - 1	with sprin	aux il Ig	iary		420 550	2,2-4,0 0 - 1	PE 6 400	A: 1,5-1,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

6	emp 40°C (104°F)	Rotational speed limitat		iel delivery jaracteristics	Starting tidle	fuel delivery 5	4a) ldi	e stop
rev/min	cm ³ /1000 strokes	changed to } rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm≨1000 strukes 7	rev/min 8	Control rod travel mm
PE 4	A:				1			
980	80,0-82,0 (79,0-83,0)	1010	750 500	81,0-84,0 81,0-84,0				
PE 6 .	A: 77,0-79,0		750	(80,0-85,0) 86,0-89,0				
	(76,0-80,0)	+ 1,0	500	(85,0-90,0) 86,5-89,0) (85,5-90,5)				

Checking values in brackets

* 1 mm less control rod travel than col. 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch. GmbH. Postfach 50. 0-7000 Stuttgart 1. Printed in the Federal Republic of German, Imprime en Republique Federale d. Allemagne par Robert Bosch. GmbH.

VDT-WPP 001/4 Edition 5.69

PE 6 A 75 C 320 RS 1035 Z

RO 250/1150 AA 239 D

supersedes

company engine:

KHD

Cam sequence and angular spacing: 1 - 6 - 4 - 2 - 5 - 3

0 -30 -90 -150-240-300°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.9 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,2 ~ 6,6	0,3	i.		
	9 15	3,0 - 3,7 8,5 - 9,3				
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check Control rod travel rev/min 1 2	Full-load speed re Setting point Control red travel mm 3	Test specifications (4)	Idle speed regular Setting point Control red travel mm 7	Test specifications Control rod travel rev/min 9	Control rod travel mm 11 12
500 15,6-16,4	500 16	1150 1160 1200 1230 1230 13,2-13,8 8,4-13,6 0 - 6,5		200 6,4-8,2 250 3,6-6,2 300 0 -2,4 320 0	400 700 15,0-16 900 14,7-15,2 1100 13,6-14,0

Torque-control travel on flyweight assembly dimension a =

Testoil-ISO 4113

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever ap. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	21	Starting for Idle spee	Control
rev/min	cm³/- *0%/si/. kes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5		rev/min 6	rod travel cm ³ /1000 strokes://mm 7
1150	68,5 - 70,5	500	1000 500 400	72,0 - 75,0 77,0 - 80,0 74,5 - 78,5			

Checking values in brackets

Test Specifications Fuel Injection Pumps (2) and Governors

40

VDT-WPP 001/4 Edition 23.3.65

En

PES 6 A 75 C 380 RS 1035

RQ 250/1075 AA 151 DR

supersedes

company:

KDA

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,2 - 6,6	0,3			
	9 18	3,0 - 3,7 8,5 - 9,5				
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che rev/min	Control rod	Full-load s Setting po rev/min 3	•	Test spec		Idle spec Setting p rev/min 7	_	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
1000	13,8-14,6	1000	14,2	1075 1100 1140 1180 1340	14-14,2 10,5-14 4,5-10,5 0 - 7 0	440	0	380 300 250 200 150	0 0 - 2 3 -3,6 5,5-8,1 7,3-8,1	400 500 700 900	15,7-16,2 15,4-15,8 15 -15,4 14,3-14,7

Torque-control trave!
on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor of Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting for	d Control
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min 6	rod travel cm ³ /1000 strokes:/ mm 7
1050	73,0 - 75,0	600	800 600	76,5 - 79,5 77,5 - 80,5		

Checking values in brackets

Testoil-ISO 41

Test Specifications Fuel Injection Pumps ① and Governors

VDT-WPP 001/4 Edition 9.12.71

Er

PES 6 A 70 B 410 RS 1034

RQV 250-1000/1500 AA1960 (V6699D)

supersedes

company engine Daimler Benz OM 312

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.5 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	12	6,5 - 7,0	0,3			
1000	6 15	1,2 - 1,9 11,1 -11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV .. AAV 7239

Upper rated s	i l			Intermediate	rated spe	1		Lower rated	speed		Stiding s	leeve travel
Degree of deflection	1	Control rod	(1 <u>a</u>)	Degree of deflection of control		Control root travel	3	Degree of deflection of control		Control rod travel		0
of control lever	rod travel mm	rev/min	(2B)	lever	rev/min	mm	\bigcirc	lever	rev/min	mm 3	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
ca.68	1500 1550 1600 1730	12,0-15 7,2-12 2,0-8 0	,0	ca.61	1000 1100 1350 1480	5,4- 5,1-			100 250 400 600 760	6,6-8,0 4,1-6,2 2,3-3,8 0,7-2,4	1500 400	0 0,6-0,8
								3 a)				

Torque control travel a = 0, 7

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 5a	Starting Idle switchin	$\mathbf{\circ}$	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min		rev/min 8	travel mm
1000	49,5-51,5 <u>A496D!</u>	1520	500 700 1500	51,5-54,5 51,5-54,5 51,0-54,0			700	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (A) and Governors

VDT-WPP 001/4 Edition 21.10.64

En

PES 3 A 80 C 320/3 LS 1013

EP/RSV 300-750 A1B 218 DR

supersedes company

MWM

engine

KDW 415Z u. D

Fendt (tractors) F 40 U1

All test specifications are valid for Bosch Fuel injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	9	5,5 - 6,0	0,4			5.5
•	6 15	2,2 - 3,0 11,5 - 12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in \Box

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	Control rod travel mm rev/min	Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm
ca.42°	750 800 825	16 10,6 7,4	with spri	out au ng	xiliar	ca.25 y	300 100	6 19 - 21	730 650	0,2-0,4
28	815 850 900 1050	7 - 10 3,7-5,8 0,9-3,4 0,3-1	with spri	auxil ng	iary		300 425 550	5,7-6,3 1,9-3,8 0 - 1	550 450 350	0,5-0,7 0,7-0,9 0,8-1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limitat	11.323	iel delivery paracteristics	Starting t	fuel delivery 5	4a idle stop	
Test oil to rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm¥1000 strokes 5	rev/min	cm#1000 strokes	rev/min	Control rod travel mm
730	63,2-65,2	760-770	600 400	66,7-69,7 68,5-71,5				

Checking values in brackets

* 1 mm less control rod travel than col 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4

En

PES 2 A 80 B 320/3 LS 1012 PES 3 A 80 B 320/3 LS 1013

EP/RSV 300-800 A 1 A 122

supersedes

company engine

MWM

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ² /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	9	5,5 - 6,0	0,4		a	
	6 15	2,2 - 3,0 11,5 -12,8	3			
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Intermed	liate rated	speed	(4)	Lower	rated speed	1 3	rque control
Degree of deflection	Control rod travel	travel				Control- lever		Control rod travel		Control rod travel
of control lever	mm 2	mm rev/min	4	5	6	deflection in degrees 7	rev/min 8	mm 9	rev/min 10	mm 11
	800	16					300	6	780	0
	840 880	11,8 6,5	with spri	out au ng	ıxılıa		100	19 - 21	440	0
(2a)	860 900 1000	7,5-10,6 2,7- 6 0,5- 1				ca. 24	300 360 500	5,7-6,3 2,8-4,2 0 - 1	330	1,2 - 1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ill-load stop	Rotational- speed limitat		el delivery aracteristics	Starting fuel delivery 5 4a idle stop			
Test oil te rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm\$1000 strokes	rev/min	Control rod travel mm 9
780	73,5 - 75,5	810 - 820				-		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 41

Test Specifications Fuel Injection Pumps (A) and Governors

9 40

VDT-WPP 001/4 Edition 29.9.65

Eπ

PE 3 A 80 C 410 RS 1000

EP/RSV 200-925 A1 B165 D

supersedes

company

oany Steyr

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1 mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm ⁹ /100 strokes. 3	mm 6
1000	9	5,5 - 6,0	0,4			
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

11 1	r rated speed Control rod travel mm 2		Interme	diate rate	d speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	1 3	rque control Control rod travel mm
ca.59		16	ماخدا	ot. 5.	.v.iliin	ca.30	200	6	900	n
	980 1060	12,6 5,8	spri		uxilia	Ty	100 200	19 - 21	700	0,4-0,6
29	1010 1120 1250	5,5-9,4 0,5-3,0 0 - 1	with spri	auxi ng	liary		400 600	1,4-3,8	400 400	0,8-1,0 1,0-1,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	Speed III			iel delivery iaracteristics	Starting f	uel delivery 5	4a Idle stop	
rev/min	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm\$1000 strokes	rev/min	cm\$1000 strokes	rev/min	Control rod travel mm 9
900	75,0-77,0	930	700 500	81,0 ~ 84,0 85,0 ~ 88,0	100	20mm RW		

Checking values in brackets

* 1 mm less control rod travel than cc 2

BOSCH

Test Specifications Fuel Injection Pumps (1A) and Governors

40

WPP 001/4

En

PE 8 A 75 B 410/3 LS 537

EP/RSV 300-1250 A 2 A 385 D

 $\text{supersed} \, \epsilon \, s$

MWM

A 371 D

company engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

2,45 + 0,1

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ² /100 strokes	Spring pre-tensioning (torque-control valve)
1000	9	3,2-3,7				
•	6 15	0,9-1,7 8,5-9,5				
200	9	1,9-2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed		Interme	diate rated	speed	4 Control-	Lower	rated speed	Torque control		
Degree of deflection of control	travel mm	travel mm rev/min				lever deflection	rev/min	travel mm	rev/min	travel mm	
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11	
ca.51	1250	16			43.4	ca.22	300	6	980	0	
	1320 1380	11,2 6,2	with spr	nout a ing	uxılıa	ry	150	19 - 21	800	0,7-0,9	
	1350	7 - 10	1	n auxi	lianu		200 300	9 - 21 5,7-6,3	600	1,3-1,5	
(2a)	1400 1470	3,4-6,4 0,5-3,2	spr		iary		400 550	4,1-5 0,3-3,1			
	1550	0,3-3,2		_			700	0,3-3,1			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp 40°C (104°F)	Rotational- speed limitat	speed limital characteristics			Starting fuel delivery 5 da idle stop			
rev/min	cm ⁹ /1000 strokes 2	changed to) rev/min 3	rev/min	cm¥1000 strokes 5	rev/min 6	cm\$1000 strokes 7	rev/min 8	travel mm 9	
1230	56,5 - 58,5	1260-1270	800 500	58,0 - 61,0 57,0 - 60,0	100	min.9,9			

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

40

WPP 001/4

PES 4 A 85 B 410 RS 499

RQ 250/1150 A 387 d /1200 A 387 d supersedes

company engine

Saurer CO 1 D

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,6	0,4			_
	6 15	0,1 - 0,8 11,3 -12,6				
200	9	3,1 - 4,0				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

estoil-ISO 4113

250/1150

Checking PRG checking rev/mir	Control rod		int Control	-		coint Control rod travel		cifications (5) Control rod travel mm 10	Torque c rev/min 11	Control rod (3)
110	0 14,2-15	1100	14,6	1170 1200 1220 1280	14,4-14,6 6 -13 0 -10 0		150 250 350 430	7,2-8,1 4,7-7 1,4-3,8 0	500 700	15,7-16,5 15,6-16 15,2-15,6 14,6-14,9

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor o Test oil ten	elivery on ontrol lever np. 40°C (104°F)	Control rad stop 3a	Fuel delive	ery characteristics	Startir Idle s	Control
revímin	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/m	rod travel in cm³/1000 strokes / mm 7
1130	61,5 - 63,5	600	500 800	46,0 - 49,0 53,0 - 56,0		

Checking values in brackets

KDA 13.2.61

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4

En

PES 3 A 65 B 320/3 RS 483

EP/RSV 300-1300 A 2 A 398 d (V 6845 d)

supersedes

company

engine

MWM

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,45 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm ⁹ / 100 strokes 4	mm 2	cm ³ /100 strokes	mm 6
1000	12	4,3 - 4,7				
•	9 18	2,0 - 2,6 8,2 - 9,1				
200	9	1,4 - 2,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm 2		Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	rev/min	rque control Control rod travel mm
ca.49	1300 1350 1400	16 11,7 4,7	witho sprin	out aux ng	xilian	ca.18 y	300 100	6	1280 1200	0,3-0,5
29	1350 1380 1480 1600	10,0-12,3 7,2-10 1 - 3,3 0,3- 1	with sprin	auxil ng	iary		200 300 500 700	10,4-21 3,7-6,3 1,5-3,6 0 - 1		1,1-1,3 1,6-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	O spi		11341	el delivery aracteristics	Starting (uel delivery 5	4a Idle stop		
rev/min	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm\1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm	
1280	38,0-40,0	1310-1320	900 500	39,5 - 42,5 37,5 - 40,5					

Checking values in brackets

* 1 mm less control rod travel than col 2

KDA 6.9.63



①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4

PES 6 A 80 B 412 RS 460

EP/RS 250/600-1250 AO A380

supersedes

MAN

MAN-Nr. 270

engine

D 0836 M 1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5 + 0,1

mm (from BDC)

Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
9	4,1 - 4,5	0,3			
6 15 9	1,2 - 2,0 9,8 -11,2 2,9 - 3,7				
	travel mm 2 9 6 15	mm cm³/100 strokes 2 3 9 4,1 - 4,5 6 1,2 - 2,0 15 9,8 -11,2	9 4,1 - 4,5 0,3 6 1,2 - 2,0 15 9,8 -11,2	rravel cm³/100 strokes cm³/ 100 strokes mm 2 mm	rravel cm³/100 strokes 2 cm³/ 100 strokes 4 cm³/ 100 strokes 2 cm²/ 100 strokes 2 cm³/ 100 strokes 2 cm³/ 100 strokes 2 cm³/ 100 strokes 2 cm²/ 10

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed							Lower rated	speed	1 .	Sliding s	eeve travel
		Control rod travel	(a)	Degree of deflection		Control ro- travel	đ	Degree of deflection		Control rod travel		1
1	rod travel mm	mm rev/min	28	of control lever	rev/min	mm	4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
ca,64	1250	12		ca.26	600	12		ca.16	250	6	1230	0
	1250	12 -12,	,5		600	, -			100	20 - 21	500	0
	1300	7,5- 9			650	5,8-	7,8	1	250	5,7-6,3		
	1350	3,4-5	,6		700	3 -	3,8		350	3,4-4,7	320	1,2-1,8
1	1400	1,4-3			800	0,4~	2		450	0,4- 3		
1	1500	0 - 1			900	0 -	1		600	0 - 1		
1 }						ĺ		3				

Torque egnirol travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed 2b timitation intermediate speed	Fuel deliv	very characteristics 5a poeed 5b	Starting idle switching	. 0	Torque-control (
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1230	71,0 - 73,0	1260-1280			100	20 mm RW		
						1		
			<u> </u>	<u> </u>	<u> </u>			<u></u>

Checking values in brackets

* 1 mm less control rod travel than col. 2

KDA 16.2.62

310

BOSCH

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

VDT-WPP MAN 5,9c Edition 2.64

PE 6 A 65 B 412 RS 320

RQ 250/1250 A 261 D

supersedes

6.11.58

company

MAN

engine:

D 0026 M 1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0 - 0,1

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	3,8 - 4,2				
	6 12	1,1 - 1,8 5,8 - 6,5				
200	6	0,6 - 1,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	ck Control rod travel	Full-load s Setting po rev/min 3	•	-	rev/min		Control rod travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
550	15,6-16,4	550	16	1250 1280 1300 1320 1380	14,5-14,8 7,8-13,2 3,8-11,2 0 - 8,6 0	540		100 200 300 400 440	6,5-8,1 5,3-7,3 2,9-5,3 0 -1,9	1000	15,8-16 15,4-15,7 14,7-15

Torque-control travel on flyweight assembly dimension a =

0,4 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

						
	elivery on ontrol lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rod travel cm ³ /1000 strokes:/ mm 7
800	56,5 - 58,5	500	500 1230	53,5 - 55,5 52,5 - 54,5	100	mind. 9,9

Checking values in brackets

BOSCH

② Test Specifications Fuel Injection Pumps ② and Governors

40

VDT-WPP 001/4 MAN 5,9 b Edition 2.64

En

PE 6 A 65 B 412 RS 320

RQ 250/1275 A 261 D MAN-Nr. 203 A 485 D

company D 0026 M 1

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,0 - 0,1

mm (from BDC)

RW 21

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,8 - 4,2	0,3			
	6 12	1,1 - 1,8 5,8 - 6,5				
200	6	0,6 - 1,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	ck Control rod I travel	Full-load s Setting po rev/min 3	•	•	rev/min	Idle spee Setting p rev/min 7	Control rod travel	Test spe	cifications 5 Control rod travel mm	Torque o	Control rod (3)
550	15,7-16,3	550	16	1275 1300 1320 1340 1400	15,5-15,9 9 -14 4 -11 0 -8,5 0	540	0	100 200 250 350 440	6,3-8,1 5 - 7 4 - 6 1 -3,5	1000	15,7- 16 15,2-15,6 14,7-15,1

Torque-control travel on flyweight assembly dimension a =

),4 mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop	Fuel delivery characteristics			Starting fuel delivery		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5		rev/min 6	Control rod travel cm ³ /1000 strokes:// mm	
800	56,5 - 58,5	500	500 1250	53,0 - 55,0 53,0 - 55,0		100	mind. 9,9	

Checking values in brackets

Test Specifications Fuel Injection Pumps (1) and Governors

WPP 001/4 MAN 8,3

PE 6 A 85 B 412 RS 161

RQV 200 - 1000 A 209 (1050) supersedes

company: engine.

MAN D 1246 MT

MAN-Nr. 56

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

4.6 + 0.1

mm (from BDC)

RW 9

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	12	7,4 - 7,8				
1000	9 6	4,4 - 5,2 2,0 - 2,8				
200	6	0,2 - 0,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding s	eeve travel
deflection	rev/min Control	Control rod travel	(19)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		1
	rod travel mm	mm rev/min	28	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
66 <u>+</u> 1,5	1000 1020 1060 1120 1200	7 - 1	8 6,2 2,5 6,8	-	ı	-	10 <u>+</u> 1,5	100 200 400 500 630	7 - 7,4 4,2-6,8 1,8-3,2 0,6- 2		
							3a				

Torque control travel a =

Testoil-ISO 4113

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 2b limitation intermediate speed	itermediate speed		Starting idle switchin	_	Torque- travel	Control 5 Control rod
rev/min	crh³/1000 strokes	rev/min (4a)	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1000	100 - 104			1055-1070				

Checking values in brackets

* 1 mm less control rod travel than col 2

KDA 27.11.1957

G15

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung 6 by Robert Blosch GmbH, D-7 Stuttgart 1, Postfach 50 Printed in the Federat Republic of Germany Imprime en République Fedérate d'Altemagne par Robert Bosch GmbH Testoil-ISO 41

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 HAN 9,3 b

PE 6 A 75 B 320 RS 165 348

RQV 250...650 A 101 d 286 d

supersedes

Hanomag

company: engine

Hannover-Linden D 93

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

1073

Port closing at prestroke

1.9 + 0.1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm ³ /	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes	100 strokes	mm 2	cm ³ /100 strokes	mm 6
700	9	4,3 - 4,7	0,3			
	6 12	1,2 - 1,9 6,9 - 7,7				
200	9	3,2 - 4,0				

Adjust the fuel delivery from each outlet according to the values in

**

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	ed	Lower rated	speed		Sliding s	leeve travel
deflection of control	rev/min Control rod travel mm	Control rod travel mm rev/min 28	of control	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm 11
65 <u>+</u> 1,5	650 660 680 720 760	14 - 17, 11,6-15, 6,6-12, 0 - 6	3		-	10 <u>+</u> 1,5	100 200	6,4-8,7 4,9-7,1 3,9-6 0,3-1,8	620 600 550 500	0 0 - 0,2 0,5-0,8 0,9-1,1
						3a)				

Torque control travel a = 1,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	ery characteristics 58 peed 5b	Starting Idle switchir	<u> </u>	Torque- travel	Control Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
640	76,0-77,0	655-670	500 400	82,0-84,0 79,0-82,0	100	ca.19mm RW		
	rt closing di 8° camshaft		een co	ntrol-rod tra	ve1 12	mm and 2! =		

Checking values in brackets

* 1 mm less control rod travel than col 2 1.3.1955

G16

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung z by Robert Bosch GmbH, D-7. Stuttgert 1, Postfach 50. Printed in the Federal Republic of Germany Imprime en Republique Federals d'Allemagne per Robert Bosch GmbH.

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4

En

PES 6 A 70 B 410 RS 174 EP/RSV 250 - 900 A 1 A 363 d

supersedes

company engine Daimler Benz OM 321

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	9	2,8 - 3,1	0,3			
1000	12 18	4,9 - 5,6 8,9 - 9,7				
200	9	2,0 - 2,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	Control rod travel mm rev/min	Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	1 3	rque control Control rod travel mm
ca.49	900 950 990	16 11,4 6	witho sprir	out aux	kiliar	ca.23 y	250 100 250	6 19 - 21 5,7-6,3	880 600	0 0,5-0,7
2 a	970 1000 1050 1150	8 - 10,5 3,8-8 0,5-3,5 0 - 1	with sprir	auxil ng	iary		350 400 550	3,4-4,6 1,5-3,8 0 - 1	300	0,9-1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) FL	ill-load stop	6 Rotational speed limitat	39 F.L	uel delivery naracteristics	Starting f	Starting fuel delivery 5 4a Idle stop			
Test oil to rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm-1000 strokes	rev/min	cm\$1000 strokes	rev/min 8	Control rod travel mm 9	
900	53,0 - 55,0	910 - 920					n 250	RW 6	

Checking values in brackets

* 1 mm less control rod travel than col 2

KDA 18.5.60

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of German, imprime en Republique Federale d. Allemagne par Robert Bosch GmbH.

①

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4

En

PE 12 A 75 B 520 RS 178 RQV 200 - 1050 A 447

supersedes

company K H D

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,2 - 3,7	0,3			
	6 15	0,9 - 1,7 8,5 - 9,5				
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection of control	rev/min Control rod travel	Control rod (travel mm	Degree of deflection of control	Degree of deflection of control			Lower rated speed Degree of deflection of control lever rev/min mm (3)			eeve travel
lever 1	10m 2	rev/min (2)	lever 4	rev/min 5	6	lever 7	8	9	rev/min 10	mm 11
66±1,5	1050 1100 1150 1200 1260	9,5- 15 4 -9,5 0 - 5	ee-	-	•	10 <u>+</u> 1,5	200 300 400 500 680	6 - 8 3 -4,5 2,3-3,8 1,5-2,8		
						<u>3a</u>	_ ,			

Torque control travel a =

шш

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) Fuel delivery characteristics (5 high idle speed (5b)			Starting Idle switchir	<u> </u>	Torque- travel	Control rod
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1000	71,0-73,0	1060-1080			100	21 mm		1000
1050	79,0-81,0	Fuel overqua (with electr	ntity omagne	t)				

Checking values in brackets

* 1 mm less control rod travel than col 2

KDA 28.3.62

BOS

VDT-WPP 001/4 DAI 10,8 g Edition 3.64

Eπ

PES 6 A 90 B 410 RS 283

RQ 250/1125 A 301 D

supersedes

1.5.61

company: engine:

Daimler Benz OM 326/172 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

RW 18

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ ¹00 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	7,5 - 7,9				
	6 15	3,2 - 4,0 16,0 -17,3				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min	Control rod	Full-load s Setting po rev/min 3			rev/min	s (4)		Control rod travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod (3)
1050	14,6-15,4	1050	15	1125 1140 1160 1180 1240	5 0	-15 -14,5 -12,5 - 9,5	530	0	100 200 250 350 430	6,8-8,1 5,4-7,6 4,2-6,6 1 -3,6 0		15,4-16,2 15,2-15,7 15 -15,1

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil ten	elivery on ontrol lever pp. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	1 -	Starting fuel delivery Idle speed Control		
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rad travel cm ³ /1000 strokes:/ mm 7		
700	96,0 - 98,0	500	500 1000 1100	94,0 - 97,0 98,0 - 102,0 98,0 - 102,0	100	mind. 14,4		

Checking values in brackets

G20

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.

4. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Fédérale d'Allemagne par Robert Bosch GmbH.

estoil-ISO 4

Test Specifications Fuel Injection Pumps and Governors

•

PE 6 A 60 B 310 RS 252 S 482 EP/MZ 80 A 90

supersedes company

engine

Perkins P 6

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

S1110

V7527

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ¹ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm*/100 strokes 6	Spring pre-tensioning (torque-control valve) mm 7
1000	12	4,5 - 5,0	0,3			
	6	0,5 - 1,2	7			
	18	8,3 - 9,1				
200	6	0,3 - 0,9				
	L	1_		1		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Leska://		Control limitatio breakay	ก	Control	and travel test	Auxiliary auxiliary		Torque co	ontrol
Torque control travel				Control rod travel		Control rod travel	Vacuum	Control rod travei	Vacuum	Control rod travel
mm	mm water col	s	mmw c	men	mmwc	mm	mmwc	mm	mm w c	mm
1	2	3	4	5	6	7	8	9	10	11
-	500-480	10	500	11,4-12	300	4,9-5,1		7,1-10,4 3,3- 6,8		
control rod travel test (cols. 4-11) rotational speed 500 rev/min adjust breakaway (cols. 4-5) by means of shims* cam adjustment (B.8-9 - C.7-8) by means of shims*										

C. Settings for Fuel Injection Pump with Fitted Governor

	full-load stop screw (est oil temp 40°C (104 F)			very character	istics	idle (sto)		Control road travel from full-load to lidle
rev/min 1	Vacuum mm wat col 2	cm ³ /1 000 strokes	rev/min	Vacuum mm wat col 5	cm ⁴ /1000 strokes 6	rev/min 7	Vacuum mm wat col	mm cm ³ /1000 strokes 8
750	0	44 - 46						

Checking values in brackets

7.4.70

BOSCH

VDT-WPP 001/4 1. Edition

PE 8 A 90 D 321/3 LS2437

RQ 250/1350AB881DR

supersedes company

Cam sequence and angular spacing:

engine

Steyr WD 815.00

1 - 5 - 4 - 8 - 6 - 3 - 7 - 2 je 45°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,15 + 0.1

mm (from BDC)

Rotational speed	Control rod travel mm	Fuel delivery cm³/100 strokes	Difference cm ³ / 100 strokes	Control rod travel	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
1000	9	5,0 - 5,5	0,4			
	6	1,6 - 2,6				
200	9	2,5 - 3,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod		ınt Control	Test spec Control rod travel	rev/min		-		Control rod	Torque o	Control rod (3)
600	15,7-16,3	600	16,0	1370 1400 1450 1490	14,6-15,0 6,6-13,4 0 - 6,0 0	530	0	150 250 350 430	7,0-8,1 5,0-7,2 1,5-4,0 0	İ	15,8-16,0 15,3-15,7 15,0-15,2

Torque-control travel

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever	Control rod stop (3a)	Fuel delive	ery characteristics 3b	Starting for	uel delivery 6
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	rod travel cm ³ /1000 strokes: mm 7
1350 without 1350 with	88,0 - 90,0 (87,0 - 91,0) 82,0 - 86,0 (81,0 - 87,0)	800	1000 800	96,0-99,0 (95,0-100,0) 97,5-100,5 (96,5-101,5)	100	ca. 15mm RW

Checking values in brackets

estoil-ISO 41

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 Edition 3.74

PES 8 A 75 C 320 RS2357 EP/RSV 450-1300 AO B1040D 12.73 supersedes Inlet pressure 2.5 bar 1-8-7-3-6-5-4-2 45° each company With CRT 10 in start-of-delivery setting of cyl. 1, positioning engine IHC DV 550 B device must engage in camshaft groove. Coupling must be horizontal in this setting.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

End of pump delivery 3,95 + 0,1

mm (from BDC)

(RW 10,0 mm)

	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1500	10,0	6,2-6,6				
1300 450	ca.8,2 ca. ca.8,8	max.4,5 0,1-1,3 min.3,4 0,1-1,4	(Cyl.1-4-6 (Cyl.2-3-9 (Cyl.1-4-6 (Cyl.2-3-9	-8) -7)		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	eed		Lower rated	speed			Studing	leeve travel
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	(a) (2a)	Degree of deflection of control lever	rev/min 5	Control ro travel mm 6	d •	Degree of deflection of control lever	rev/min 8	Control ro travel mm 9	3	rev/min	mm 11
ca.52	1550	13,0 9,8 5,9 9,2-10, 2,8- 5, 0,3- 1,	2 0	without spring with ac spring	ıxilia			ca.30	450 300 450 600 750	5,7 19 - 5,4-6 1,5-3 0 -	,0	1300 550	0 0,6-0,8

Torque control travel a =

estoil-ISO 41

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed 2b iimitation intermediate speed	Fuel deliv	very characteristics 5a peed 5b	Starting Idle switchir	$\overline{}$	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 44	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1300	63,5-65,5	1350~1365*	1000	61,0-65,0	100 100 450 450	14,5-18,5 (Cyl.2 Cyl.1	-4-6-7) -3-5-8) -4-6-7) -3-5-8)

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps (1A) and Governors

VDT-WPP 001/4 Edition 30.3.72

PES 6 A 90 D 420 LS 2354

EP/RSV 375-1050 A2B622DR

supersedes

company engine

Case A 451 BDT

Test with case overflow valve!

Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Difference cm ² / 100 strokes	Control rod travel mm	Fuel delivery cm ^{\$} 100 strokes	Spring pre-tensioning (torque-control valve) mm
	9	4,6 - 5,1	0,5			
1000	6 12	1,1 - 2,0 8,4 - 9,4				
200	9	2,7 - 3,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

ca.38 1080 12,4 ca.18 375 7,2	
1110 8,1 without auxiliary 150 19 - 21 800 0,4	1050 0 0 19 - 21 800 0,4-0,6 5 6,9-7,5 450 0,6-0,9

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting I	uel delivery 5		e stop
rev/min	emp 40°C (104°F) cm ^{\$} /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm \$1000 strokes		Control rod travel mm
1050	100 - 102	1090	1150 750 675	8,0 - 18,0 109 - 113 max. 112	100	12,6-13,2	375	15,25- 19,25

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 41

Test Specifications Fuel Injection Pumps (1A) and Governors

VDT-WPP 001/4 Edition 29.8.74

En

PES 6 A 90 C 420 LS 2264 ..D..

EP/RSV 300-1050 A2 B567DR

supersedes.

11.5.70 16.2.71/22.4.71

375-1050

company engine

Case A 451 BDT

..D.. LS 2461

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

LS 2354

Test with case overflow valve! Pay attention to special governor setting!

Port closing at prestroke 2,15+0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1	2	3	4	2	3	6
	. 9	4,6 - 5,1	0,4	30 0	00 V 9 V V V V V V V V V V V V V V V V V	
1000	6 12	1,1 - 2,0 8,4 - 9,4			·	
200	9	2,7 - 3,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	hate rated	speed	Control- lever deflection in degrees	Lower rev/min 8	rated speed Control rod travel mm	rev/min	rque control Control rod travel mm
ca .39	1070 1110 1160 1090 1150 1260	12,4 7,7 2,3 11,8-12,4 4,8-6,0 0 - 1	sprin	out aux 19 auxil	kiliar	ca.18 y	375 150 375 450 580	7,4 19 - 21 7,1 -7,7 3,2 -5,1 0 - 1	1050 900	0 0,1 - 0,3 0,3 - 0,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

C	ull-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting t	fuel delivery 5	(4a) idi	e stop
	emp. 40°C (104°F) cm ² /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm\$1000 strokes	rev/min	cm [#] 1000 strokes 7	rev/min 8	Control rod travel mm
1050	95,5-97,5	1090-1195:*	750	8 - 18 99 -103 max.102	100	12,6-13,2	375	15,25- 19,25

Checking values in brackets

* 1 mm less control rod travel than col. 2

VDT-WPP 001/4 Edition 7.73

PES 4 A 85 C 410 RS 2331 PES 6 A 85 C 410 RS 2332 EP/RSV 250-900 A1 B1029L

supersedes

Motori VM company VM -114

VM 116

Port closing difference between control-rod travel 13 mm and 21 =

 $6\text{-}7,5^\circ$ camshaft. All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,7 + 0,05

mm (from BDC)

RW 21

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
	9	5,9 - 6,3	0,4	20 0 - 11 110		
1000	6	2,0 - 2,8				
200	6	0,1 - 0,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2	rev/min Control rod travel mm rev/min 3	intermed	Intermediate rated speed 4 5 6			Lower rev/min 8	rated speed Control rod travel mm 9	1(3)	rque control Control rod travel mm
ca.50	900 960 1000	16,0 10,8 5,4		without auxiliar spring with auxiliary spring			250 100	6,0	880	0
2a	980 1050 1150	5,6-9,6 0,9-3,2 0 - 1					250 350 450	5,7-6,3 1,0-3,4 0 - 1	300	0 1,2 -1, 8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop		speed limitat				uel delivery 5	4a Idle stop	
1	mp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm¥1000 strokes 5	rev/min 6	cm≇1000 strokes 7	rev/min 8	Control ro travel mm
880	82,5-84,5	910			200 dispers	1,5-9,5 ion max.2)		

Checking values in brackets

* 1 mm less control rod travel than col 2

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VDT-WPP 001/4 Edition 11.1.72

PES 6 A 90 C 410 RS 2326

RQV 250-1300 AB 787 DL

company:

Saurer CP 3 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

			-			
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	9	5,8 - 6,3	0,4			
1000	6	2,5 - 3,4				
	12	10,2 -11,1				
200	9	3,2 - 4,1				

Adjust the fuel delivery from each outlet according to the values in

Testoil-ISO 4113

B. Governor Settings

Upper rated s	peed	1		intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
deflection of control	rev/min Control rod travel	Control rod travel mm	(1a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever	mm 2	rev/min 3	(2a)	lever 4	rev/min 5	mm (4) 6	lever 7	rev/min 8	mm (3)	rev/min 10	:mm 11
ca.66	1300 1380 1460 1580	15,0-17 9 -13 0 - 8 0	,8	-	· -	-	ca.10	100 250 400 600 770	6,6-8,0 3,5-5,7 2,2-3,7 0,8-2,2	1300 600	0 0,4-0,6
							(3a)				

Torque control travel a = 0.5

C. Settings for Fuel Injection Pump with Fitted Governor

	stop ip. 40°C (104°F) 2	Rotational-speed (2b) Fuel delivery characteristric high idle speed (5b) fuel delivery characteristric high idle speed (5b)			Starting Idle switchir	fuel delivery 6	Torque- travel	control 5 Control rod travel
rev/min	cfh ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
1300	74 - 76	1320	700 500	72,5 - 75,5 62,5 - 65,5	100	ca.15 mmRW		·

Checking values in brackets

* 1 mm less control rod travel than col. 2

VDT-WPP 001/4 Edition 9.72

PE 6 A 85 D 412 RS 2303

RQV 250-825/1400 AB819D

supersedes company engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV 250-825/1400 AB819D

Upper rated s	peed	1	intermediat	e rated sp	eed	Lower rated	speed	•	Sliding s	leeve travel
Degree of deflection of control	rev/min Control rod travel	travei C	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel		1
lever	mm	rev/min (2	a) lever	rev/min	mm 4	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.66	1400 1460 1540	14,0-17,0 9,0-13,5 1,5- 8,4	5	700 900 1000	2,8-4,8		100 250 500	6,5-8,0 3,4-5,7 1,0-2,0	800 500	0 0,9-1,1
	1660	0		1380	0		620	0	D-150 250	Start 1,0-2,2
						<u></u>			400	2,4-2,9
				<u> </u>		3			900	6,6-7,1
Torque contro	i travel a =	= 1 ∩mr	n						1000	7,4-7,6

Torque control travel a =

1.0mm

1400 8,3 1560-1660 end (11)

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed	high idle speed (Sh)		Starting Idle switchir	<u> </u>	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9 .
0,5 kg	/cm²		0,5 k	p/cm²				
1400	72,5-74,5	1430	800	69,0 - 72,0	Chan	ge-over point		
			0 1	p/cm²	200	- 130 U/min		
			500	57,5 - 61,5				
						•		

Checking values in brackets

* 1 mm less control rod travel than col. 2

①

Test Specifications Fuel Injection Pumps (1) and Governors

VDT-WPP 001/4 Edition 2.7.71

En

PE 6 A 80 C 320 RS 2312

RQV 250-1200 AB760DR

supersodes

9.5.71 Fnasa

engine.

Enasa 9120/30

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delixery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5	0,4		3,1 - 3,5	
200	6 15 9	1,2 - 2,0 10,3 -11,4 2,9 - 3,7			0,1 - 0,6 0,6 - 1,3	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	•	Intermediat	e rated sp	eed	Lower rated	speed		Sliding s	leeve travei
deflection of control	rev/min Control rod travel mm 2	mm -	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min	Control rod travel mm 3	rev/min	mm 11
ca.65					-	ca.10	100 250 400 600 800	7,2-8,2 4,4-6,6 3,2-2,8 1,6-2,8		•

Torque control travel a =

Testoil-ISO 4113

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed 2b limitation intermediate speed			Starting Idle switchin		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1200	64 - 66	1220				17,7-18,3 ge-over point 200 U/min		

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

VDT-WPP 001/4

Edition 4.11.69

En

PES 6 A 85 C 410/3 RS 2297 EP/RSV 500-1100 A 4 B548 D Positioning bore in gear is start-of-delivery setting of cyl. 1 (on drive)!

supersedes

company engine

Ford 2704 E

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
	9	3,8 - 4,3	0,3			
1000 ·	6 12	0,9 - 1,7 6,9 - 7,9				
200	9	2,9 - 3,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	nate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm 9	9	rque control Control rod travel mm
ca.70		16,0 11,0 3,2 9,0-11,5 3,0-8,0 0-1	sprin	auxili		ca.34 y	500 150 500 580	5,5 19 - 21 5,2-5,8 0 - 1	1080 1000 500	0 0,2-0,4 0,2-0,4

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
rev/min	emp 40°C (104°F) cm ² /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm*/1000 strokes 5	rev/min	cm 1000 strokes	rev/min	Control rod travel mm	
1100	62,5 - 64,5	1120	800 500	58,5 - 61,5 53,0 - 57,0			500	5,0	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. < 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of German, imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

VDT-WPP 001/4 Edition 9.73

Er

PES 4 A 90 C 410 RS 2294

EP/RSV 300-1200 A1B424DL (V10497D)

supersedes

company engine Daimler-Benz OM 314

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min 1.	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	4,5 - 5,0	0,4			
200	6 12 9	1,8 - 2,6 7,3 - 8,2 2,0 - 2,8				
200	9	2,0 - 2,0		1		

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	ate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1(0)	rque control Control rod travel mm
ca.67	1200 1250 1290	16,0 11,2 6,4	witho sprin		kiliar	ca.28 y	300 100 300	7,3 19 - 21 7,0-7,6	1180 700	0
2 a		3,5-11,0 2,0- 4,8 0 - 1		with auxiliary spring			450 640	3 - 5	350	0,3-0,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	emp 40°C (104°F)	6 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a Idle stop		
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min	cm¥100Ω strokes	rev/min	cm\$1000 strokes 7		Control rod trave: mm	
1180	54,0-56,0	1225:0,5- 1,0 nmRW less than column 2	800 500	46,0-49,0 41,5-44,0	3	15,0-15,6 mm RW	300	7,3	

Checking values in prackets

* 1 mm less control rod travel than col 2

BOSCH

40

VDT-WPP 001/4 Edition 24.4.70

En

PES 6 A 80 C 420 LS 2264

EP/RSV 300-950 A 2 B520DR

supersedes

10.69

Test with case overflow valve!

Pay attention to special governor setting!

company engine Case A 401 BD

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Firel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
	9	4,1 - 4,5	0,3			
1000 •	6 . 12	1,3 - 2,1 6,8 - 7,6				
200	6	1,3 - 2,1				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Degree of deflection of control	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	diate rated	speed	Control- lever deflection	Lower	rated speed Control rod travel mm	(\ \ \ \	rque control Control rod travel mm
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
ca.43	960	10,8				ca.27	375	6,0	930	0
	1000 1050	8,7 5,0	with spri	iout ai ing	uxilia	ry	150 375	19 - 21 5,7-6,3	750	0,5-0,7
23	1000 1100 1160	8,0-9,0 1,2-3,0 0 - 1		with auxiliary spring			450 600	3,3-4,6	450	0,8-1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(A)	Full-load stop est oil temp 40° C (104°F) Rotational- speed limitat			ieł delivery aracteristics	Starting fuel delivery 5 4a idle stop			,
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min	cm [§] 1000 strokes 7	rev/min 8	Control rod travel mm
930	60,5-62,5	960	650	10,5 - 18,5 69,0 - 72,0 max. 71,0	100	11,1-11,7	375	12,5 15,5

Checking values in brackets

* 1 mm less control rod travel than col 2

4

VDT-WPP 001/4 Edition 25.1.73

En

PES 6 A 85 C 420 LS 2264

EP/RSV 300-950 A 2 B 553 DR

supersedes

28.4.71

375-950

company engine

Case A 401 BD

Test with case overflow valve!

Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Ditterence	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm³/100 strokes	100 strokes	mm 2	cm ^{\$} /100 strokes	mm 6
	9	4,1 - 4,5	0,4		5	
1000	6 12	1,1 - 1,9 7,2 - 8,0				
200	6	0,9 - 1,7				

Adjust the fuel delivery from each outlet according to the values in ...

B. Governor Settings

1 1	r rated speed Control rod travel mm 2	rev/min Control rod travel mm rev/min 3	Intermed	ate rated	speed 6	Control- lever deflection in degrees 7	Lowe rev/min 8	r rated speed Control rod travel mm 9	(3)	rque control Control rod travel mm 11
ca.40	970 1020 1170 990 1050	10,4 6,6 2,2 10,2-10,6 3,8- 5,2	spri	auxil		ca.23 Y	375 150 375 450 600	6,3 19 - 21 6,0-6,6 3,1-4,5 0 - 1	950 800 400	0 0,5-0,7 1,3-1,6
20	1140	0 - 1	. spi ii							

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) FL	ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting tidle	fuel delivery 5	(4a) Idi	e stop
Test oil to rev/min 1	emp 40°C (104°F) cm3/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm 1000 strokes	rev/min	cm\$1000 strokes	rev/min	Control rod travel mm
950	59,0 - 61,0	990	1045 600 500	6,5 - 14,5 71,0-75,0 max. 73,5	100	12,6-13,2	375	12,5-16,

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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VDT-WPP 001/4 Edition 11.8.72

Εn

PES 6 A 85 C 420 LS 2264

EP/RSV 900-925 A 2 B 544 DR

supersedes

company

engine

28.4.71 Case

A 401

375-925

Test with case overflow valve!

Pay attention to special governor setting!
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

Rotational speed rev/min	Control rod travel	Fuel delivery cm³/100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ⁹ /100 strokes	Spring pre-tensioning (torque-control valve)
	9	4,1 - 4,5	0,4			
1000	6 12	1,1 - 1,9 7,2 - 8,0				
200	6	0,9 - 1,7				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

1. 1 /	r rated speed Control rod travel mm		Intermed	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.40	940 1000 1050	10,2 5,8 2,0	withous spring	out au	xilian	ca.24 y	375 150 375	6,6 19 - 21 6,3-6,9	925 800	0 0,5-0,7
28	965 1000 1120	9,9-10,4 6,0- 7,2 0 - 1	with sprin	auxil ng	iary		450 600	3,6-4,5 0 - 1	450	1,3-1,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	all-load stop emp 40°C (104°F)			el delivery aracteristics	Starting fuel delivery 5		4a Idle stop	
rev/min	cm ³ /1000 strokes	changed to) tev/min 3	rev/min	cm¥1000 strokes	rev/min	cm拳1000 strokes 7	rev/min	Control rod travel mm
925	55,0 - 57,0	965	550	8,5 - 16,5 64,5 - 68,5 max. 67,0	100	12,6-13,2	375	12,5- 16,5

Checking values in brackets

* 1 mm less control rod travel than col 2

Geschaftsbereich KM. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fedérale d'Allemagne par Robert Bosch GmbH.

VDT-WPP 001/4 Edition 17.2.71

PES 6 A 85 C 420 LS 2264

EP/RSV 300-1000 A 2 B 546 DR

supersedes

16.9.70

375-1000

company engine

Case A 401 BD

ist with case overflow valve!

Pay attention to special governor setting!
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
	9	4,8 - 5,3	0,4			
1000	6 12	1,7 - 2,5 8,2 - 9,0				
200	6	1,1 - 1,9				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

	r rated speed Control rod travel mm	d rev/min {Control rod travel mm rev/min 3	Interme	ediate rate	ed speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	9	rque control Control rod travel mm
ca.40	1020 1050 1070 1050 1100 1200	10,5 7,4 5,6 6,5 - 8,0 3 - 4,3 0 - 1	spri	ng auxil	uxilian liary	ca.22 y	375 150 375 450 600	6,5 19 - 21 6,2-6,8 3,0-4,6 0 - 1	980 800 450	0 0,5 - 0,7 0,9 - 1,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

W	ill-load stop	Rotational-speed limitat 6 Rotational-speed limitat 6 Rotational-speed limitat			Starting f	uel delivery 5	4a Idle stop	
rev/min	emp 40°C (104°F) cm ² /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm#1000 strokes	rev/min	Control rod travel mm
980	58,0 - 60,0	1020	650 550	63,0 - 66,0 max. 65,0	100	12,6-13,2	375	12,5- 16,5

Checking values in brackets

* 1 mm less control rod travel than col 2

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VDT-WPP 001/4 Edition 31.7.73

PES 4 A 85 D 420 LS2263

EP/RSV 375-1050 A2B706DR

supersedes

company engine

Case A 336 BD

Test with case overflow valve! Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15+0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (forque-control valve)
1	2	3	4	2	3	6
	9	4,15-4,55	0,4			
1000	6 12	1,15-1,95 7,25-8,05				
200	6	0,95-1,75				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	nate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	rev/min	que control Control rod travel min
ca.40	1070 1100 1140 1090 1150 1240	13,4 10,0 3,6 13,2-13,8 4,8-6,6 0 - 1	spri	auxil		ca.18 ry	375 150 375 450 600	8,0 19 - 21 7,7-8,3 3,5-5,6 0 - 1	1050 500	0 0,2-0,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limitat	The state of the s		Starting t	uel delivery 5	4a Idle stop		
Test oil to rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/ının 4	cm 1000 strokes	rev/min	cm 1000 strokes	rev/min 8	Control rod travel mm	
1050	94,5 - 96,5	1080-1095	750 650 1150	98,5-102,5 max. 101,5 8,5- 18,5	100	12,4-13,4	375	17,5- 23,5	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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VDT-WPP 001/4 Edition 2.9.71

Ēn

PES 4 A 85 C 420 LS 2263

EP/RSV 300-950 A 2 B 519DR

supersedes

23.2.71

Test with case overflow valve! Pay attention to special governor setting! company engine

Case A 336 BD

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque control valve)
rev/min 1	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ^{\$} /100 strakes	mm 6
	9	4,1 - 4,5	0,4			
1000°	6	1,1 - 1,9				
	12	7,2 - 8,0				
200	6	0,9 - 1,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

10 1 /	rated speed Control rod travel mm		Intermed 4	liate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	O	rque control Control rod travel mm
ca.43	970 1000 1050	11,6 9,4 6,0	witho sprin	ut aux g	iliar	ca.27 y	375 150	7,0 19 - 21	950 400	0 0,4-0,7
28	1050 1100 1200	5,0-6,6 2,1-3,8 0 - 1	with auxiliary spring				375 450 640	6,7-7,3 4,2-5,5 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	39 Ft.	iel delivery haracteristics	Starting fuel delivery 5		4a) Idle stop	
Test oil to	emp 40°C (104°F) cm3/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm\$1000 strokes	rev/min	cm\$1000 strakes	rev/min	Control rod travel mm
930	86,0 - 88,0	970	750 500	92,5-95,5 max. 94,5	100	12,6-13,2	375	18,5- 22,5

Checking values in brackets

* 1 mm less control rod travel than col 2

40

VDT-WPP 001/4 Edition 24.2.70

En

PES 4 A 80 C 420 LS 2263

EP/RSV 300-950 A 2 B 518 DR

supersedes 30.6.69

company

Case

Test with case overflow valve!
Pay attention to special governor setting!

00000

A 267 BD

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm (2)	3	100 strokes 4	mm 2	cm ^{\$} /100 strokes	mm 6
	9	4,1 - 4,5	0,3	·		
1000	6 12	1,3 - 2,1 6,8 - 7,6				
200	6	1,3 - 2,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermed	tiate rated	speed	Control- lever deflection in degrees	Lower rev/min 8	rated speed Control rod travel	.	rque control Control rod travel mm
ca.46	970 1000 1070 1050 1100 1200	11,0 9,0 5,0-6,8 2,4-4,0 0 - 1	sprin	auxil:		ca.29 y	375 150 375 450 630	6,5 19 - 21 6,2-6,8 3,9-5,2 0 - 1	960 800 450	0 0,3-0,5 0,7-1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	Spe		The state of the s			uel delivery 5	4a Idle stop		
Test oil te rev/min 1	cm ³ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm 11000 strokes	rev/min 8	Control rod travel mm	
930	58,0-60,0	970	650 550	65,0-68,0 max. 67,0	100	11,1-11,7	375	12,5- 16,5	

Checking values in brackets

* 1 mm less control rod travel than col 2

VDT-WPP 001/4 KHD 17,4 a Edition 6.71

PE 12 A 85 C 520 RS 2256 RQ 200/1150 AB 638 DR

1 - 4 - 9 - 8 - 5 - 2 - 11 - 10 - 3 - 6 - 7 - 12 - 1 0 -15 -60 -75 -120-135-180-195-240-255-300-315-360°

supersedes 3.70 KHD company

F 12 L 814 engine (300 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,5 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
	9	4,9 - 5,5	0,4			
1000	6 15	1,3 - 2,1 12,3 -13,1				
200	6	0,1 - 0,9	· .			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	g of slider ck Control rod travel mm 2	Full-foad s Setting po rev/min 3			\sim	Idle spec Setting p rev/min 7	Control rod travel		cifications 5 Control rod travel mm	rev/min	Control rod travel mm
530	15,3-15,9	550	15,6	1170 1200 1230 1290	13,6-14,0 6,5-12,5 0 - 8,3 0		0	100 200 300 440	6,5-8,1 3,8-5,4 3,0-5,3 0	800	15,4-15,7 14,8-15,2 14,0-14,3
Torque-0	control travel	1	0,6	5							1 mm less contro

Torque-control travel on flyweight assembly dimension a

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	Full-load de governor co Test oil tem		Control rod stop 3a	Fuel delivery characteristics			Starting for Idle spee	uel delivery - 6
;·		cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	- 1	rev/min 6	red travel cm³/1000 strokes: / mm 7
	1150	76,5 - 78,5	c	1000 700	77,5 - 79,5 82,5 - 84,5		100	ca. 16 mm RW
		·						

Checking values in brackets

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En

PES 6 A 85 C 410 RS 2254

EP/RSV 250-1125 A 1 B 41 L

supersedes

250-1100*

company Kaelble

.. A 1 B 290 L

engine MD 215S

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15+0,1

mm (from BDC)

RW 9 mm = 0,6+0,1 max.

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	cm ³ / 1C0 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	6	1,3 - 2,1				
•	9 15	3,9 - 4,3 9,8 -11,2	0,4			
200	9	3,9 - 4,4	0,4			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermediate rated speed Control-lever deflection in degrees 7		Control- lever deflection		rated speed Control rod travel mm	Torque control Control rod travel rev/min mm 10 11		
ca.62	1125 1180 1230	16,0 10,5 4,0				ca.26	250 100 250	6,0 1,9-2,1 5,7-6,3	1100 400	
2 a	1170 1220 1340	10,6-12,5 3,4-3,7 0-1					300 440	0,9-3,3	290	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) FL	III-load stop	6 Rotational- speed limitat			Starting fuel delivery 5			4a Idle stop	
Test oil to rev/min 1	emp 40°C (104°F) cm ³ /1000 strokes 2	Note changed to rev/mir:	rev/min	cm 1000 strokes 5	rev/min 6	cm¶1000 strokes 7		Control rod travel mm	
1100 1120		1120 1140				-			

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

VDT-WPP 001/4 Edition 6.68

En

PE 4 A 80 C 410 RS 2249 (V 8595) EP/RSV 250-900 A 1 B 274 DL

supersedes

company engine Torpedo T 524 TK

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,15 + 0,1

Port closing at prestroke

mm (from BDC)

Rotational speed	Control roct travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm³/100 strokes	mm 6
1000	9	5,5 - 6,0				
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 3,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed		Interme	diate rated	d speed	4)	Lower	rated speed	(3) To	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
ca.49	900 950	16,0	u si de la		1	ca.23	250	6,0	880	0 0 - 0,2
	990	11,4 5,8	spri	out au. ng	xıılar	y	100	19,0-21,0	800 700	0,3-0,5
2a	970 1000 1050 1120	7,0-10,3 4,0-6,8 0,9-3,6 0,3-1,0	with spri	auxil ng	iary		250 350 450 550	5,7-6,3 3,5-4,7 0 -2,8 0 -1,0	550 350	0,7-0,9 0,7-0,9

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limitat		iel delivery naracteristics	Starting I	Starting fuel delivery 5 4a Idle stop			
rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to 1 rev/min 3	rev/min	cm\$1000 strakes	rev/min	cm 1000 strokes	rev/min 8	Control root travel mm	
900	76,0 - 79,0	910 - 920	700 500	79,5 - 83,5 76,5 - 80,5					

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

40

VDT-WPP 001/4 Edition 29.11.68

En

RO-PES 4 A 90 C 410 RS 2240

RO-EP/RSV 250-900 A1B262 DL

supersedes

company engine

Mefin D 103 (65PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,9 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuer delivery	Spring pre tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
	9	5,8 - 6,3	0,4			
1000	6 15	2,5 - 3,4 13,5 - 14,8				
200	9	3,2 - 4,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2	Control rod travel mm rev/min	Intermed	tiate rated	t speed	Control lever deflection in degrees 7	rey/min	r rated speed Control rod travel mm 9	1 4	rque control Control rod travel mm
ca.48	900 950 980	16,0 11,0 6,6				ca.23 y	250 100 250	6,0 19 - 21 5,7-6,3	880 700	0 0,3 - 0,5
20	950 1000 1060	9,5-12,0 1,8-6,0 0 - 1	1 -	spring with auxiliary spring			300 420	3,5-4,6 0 - 1	400	0,3 - 0,9

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational speed limitat	speed limitat Characteristics			fuel delivery 5	4a Idle Stop		
rev/min	emp 40°C (104 F) cm³/1090 strokes 2	0°C (104 F) Note changed to 1		cm#1000 strokes 5	rev/min	cm \$1000 strokes	rev/min	Control rod travel mm	
900	71,0 - 73,0	920	600 400	78,0 - 81,0 68,0 - 70,0	100	mind. 20mm RW			

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

VDT-WPP 001/4 Edition 6.3.67

Εn

PE 4 A 75 C 412 RS 2222

EP/RSV 250-1600 A2B 484 DL

supersed∈s

company

Hotschkiss

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9 + 0,1

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ^{\$} /100 strokes	тт 6
1000	9	3,7 - 4,1	0,3			
	6 15	1,2 - 1,9 9,3 -10,3				
200	9	2,2 - 3,0				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	tiate rated	speed	Control- lever deflection in degrees	Lower rev/min	rated speed Control rod travel mm	1(3)	rque control Control rod travel mm
ca.69	1600 1680 1740	16,0 10,8 6,4	witho sprin	out aux	xiliar	ca.24 y	250 150	7,0 19 - 21	1580 1200	0 - 0,2
22	1700 1800 1950	7,8-10,4 2,4- 5,0 0 - 1	•	with auxiliary spring			250 450 600 760	6,7-7,3 3,5-5,3 0 -3,3 0 - 1	800 400	0,6-0,8

The numbers denote the sequence of the tests

estoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

9	ull-load stop	6 Rotational- speed limitat				uel delivery 5	(4a) Idi	e stop
Test oil to rev/min 1	emp 40°C (104°F) cm3/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm#1000 strokes	rev/min	cm第1000 strokes 7	rev/min B	Control rod travel mm
1500	44,0-46,0	1620	1675 500 1600	5,0-15,0 42,0-45,0 43,0-46,0	250	0,9-1,1		

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

VDT-WPP 001/4

2. Edition

En

PES 4 A 85 C 320/3 RS 2121 PES 4 A 85 D 320 RS 2423 EP/RSV 300-1000 A1B41 EP/RSV 300-1050 A1B41 (1) supersedes(2) company

11.64,10.74 Hüllmann

engine D 300 (1) D 310 (2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,5+0,1

RW9

mm (from BDC)

Rotational speed rev/min 1	travel "C"		Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery "D" cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mrn 6
1000	9	5,5 - 5,9	0,4	9	5,6 - 6,0	
	6 12	1,6 - 2,6 9,4 -10,4		6	2,3 - 3,1	
200	6	0,4 - 1,3		6	0,1 - 0,7	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Testoil-ISO 4113

(1)

(2)

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	liate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	rev/min	rque control Control rod travel mm 11
ca.56	1050 1100 1150	16,0 10,2 3,0	witho sprin	out aux	xilian	ca.25 y	300 100 300	6,0 19 - 21 5,7-6,3	1030	0
29		8,4-12,0 2,4- 5,8 0,3- 1,0	l .	with auxiliary spring			350 350 450	3,6-4,5	310	1,2 1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	Ga Fuel delivery characteristics		Starting f	uel delivery 5	4a) Idle Stop	
rev/min	emp 40°C (104°F) cm3/1000 strokes	Note changed to) rev/min	rev/min	cm¥1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm
1	2	3	4	5	6	7	8	9 .
ca. 1	0 mm RW-	1020						
1050	83,5-85,5	1090-1100*			100	6,1 - 7,1		
** Po 6	rt closing diffe - 7° camshaft.	erence betwe	en coi	trol-rod travel	9 mm	and 21 =		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

40

VDT-WPP 001/4 Edition 3.6.69

En

PES 6 A 90 C 420 LS 2209

EP/RSV 225-1100 A 1 B 467 R

supersedes

company

Berliet

engine

MH 635

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rutational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm . 2	cm ⁹ /100 strokes 3	mm 6
1000	6	2,9 - 3,7				
	9 15	7,4 - 7,9 16,0 -17,3	0,4			
200	6	1,1 - 2,0				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

estoil-ISO 4113

Degree of deflection of control lever	r rated speed Control rod travel mm 2	Control rod travel mm rev/min	Interme	diate rated	speed	Control lever deflection in degrees 7		rated speed Control rod travel mm 9	1(9)	rque control Confrol rod travel mm 11
ca.60	1100 1140 1180	16 12,3 7,3	with spri	out au	ıxilia	ca.24 ry	225 100	6,0	750 400	0
29	1160 1220 1320	8 -11,0 2,2-4,6 0 - 1	with auxiliary spring				225 320 430	5,7-6,3 1,6-3,9 0 - 1	275	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(20)	ill load stop	6 Rotational- speed limitat	(3a) Fu	iel delivery iaracteristics	Starting f	uel delivery 5	4a Idle stop	
rev/min	emp 40°C (1C4°F) cm ³ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm¥1000 strokes	rev/min	cm\\$1000 strokes	rev/min 8	Control rod travel mm
750	125,5- 128,5				100	min RW 20		

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

VDT-WPP 001/4

PES 4 A 80 C 320 RS 2202

EP/RSV 200-950 A 7 B 476 R

supersedes

company

MAN

engine

D 0834 M5 (73 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,3 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travei	Fuel delivery	Spring pre tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strakes	cm³/ 100 strokes 4	mm 2	cm\$100 strokes	mm 6
	6	1,2 - 2,0				
1000	9 15	4,1 - 4,5 10,3 -11,4				
200	9	2,9 - 3,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of	rated speed Control rod travel mm		intermed	late rated	speed	Control- lever deflection in degrees 7	_	rated speed Control rod travel mm	(3)	rque control Control rod travel mm
ca.64	950 980 1010	16,0 12,2 7,5	with spri	out au ng	ıxilia	ca.24 ry	200 100	6,0 19,0-21,	950 950	0
23	1000 1050 1150	7,0-10,5 2,0-3,8 0-1	with spri	auxil ng	iary		200 300 400	5,7-6,3 1,8-3,8 0 - 1	250	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill load stop	Speed illilitat		el delivery aracteristics	Starting f	uel delivery 5	4a) Idle stop		
rev/min	cm ³ /1000 strokes	Note changed to) rev/min	rev/min	cm¥1000 strokes	rev/min	cm 1000 strokes	rev/min 8	Control rod travel mm	
950	58,5 - 60,5	970							

Checking values in brackets

* 1 mm less control rod travel than col. 2

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VDT-WPP 001/4 KHD 12,5

PE 10 A 90 C 610/4 LS 2180

RQ 250/1400 AB 575 DL

supersedes

company:

KHD

engine:

F 10 L 312

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,9 - 6,4				
	6	2,7 - 2,5 13,4 -14,3				
. 200	9	3,1 - 4,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	Control rod travel	Full-load s Setting po rev/min 3	•	-	rev/min	Idle spee Setting p rev/min 7	Control rod travel	Test spe	crifications 5 Control rod travel mm 10	rev/min	Control rod (3)
130	13,6-15,4	1300	14,0	1400 1440 1460 1520	13,8-14 4 -12 0 - 9,4 0	520	0	150 250 350 420	6,2-8,1 4,2-6,5 0,8-3,2	850	15,8-16 15,2-15,5 14,2-14,6

Torque-control travel on flyweight assembly dimension a = 0,6 mm 0,05

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

rod tr	Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		2	Control rod stop	Fuel delive	ery characteristics	3 b	Starting fuel delivery Idle speed		
					rev/min 4	cm ³ /-1 00 0 strokes 5			rod trave cm ³ /1000 strokes / mm 7	
	1380	74,5-76,5		600						

Checking values in brackets

25.11.65

40

VDT-WPP 001/4 Edition 10.65

En

PE 6 A 90 C 410 RS 2174

RQ 250/1200 AB 411 DL

supersedes

company

engine:

FBW CU

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,65 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,9 - 6,4	0,4			
	6 15	2,3 - 3,1 14,2 -15,5				
200	9	3,8 - 4,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking	of slider	Full-load s	peed re	gulation		Idle speed regulation				Torque control	
	Control rod travel	Setting po	Control rod travel mm	Control rod travel	cifications (4) rev/min 6		Control rod travel mm	Test spe rev/min 9	cifications 5 Control rod travel mm	rev/min	Control rod (3) travel mm 12
600	15,6-16,4	600	16	1200 1240 1280 1340	14,6-14,9 6,4-12,2 0 - 7,2 0	560	0	100 200 300 400 460	7 - 8,1 5,8-8,1 3,5-6 0 -3,8	1000	15,6-16 15,3-15,7 14,7-15,1

Torque-control travel on flyweight assembly dimension a =

,4 __mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor o Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics (3)	Starting f	uel delivery d (a) (a) (b) (a) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min	rad travel cm ³ /1000 strokes:/ mm 7
1180	60,0 - 63,0	C, col.6-7		•	100	14 mm RW

Checking values in brackets

VDT-WPP 001/4 Edition 8.74

En

PES 6 A 85 D 410 RS 2139

RQ 250/1250 AB904DL

supersedes

company:

MAN

D 0846 HM 11 (Korea)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.5 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5	0,4			
	6	0,6 - 1,4				
200	9	1,4 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PQ 250/1250 AB904DL

Checkin PRG che rev/min 1	Control rod		,	Test spec Control rod travel	rev/min	Idle spec Setting p rev/min 7	Control rod travel		Control rod Control rod travel mm	rev/min	Control rod (3) travel mm
600	15,7-16,3	600	-	1270 1300 1330 1390	14,4-14,7 7,0-12,8 0 -10 0	520	0	150 250 350 420	6,4-7,8 4,2-6,0 0,6-3,2 0	900 1150	15,8-16,0 14,8-15,1

Torque-control travel on flyweight assembly dimension a =

estoil-ISO 4113

0,4 mm

Speed regulation: At

1290-1305

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	rod travel cm ³ /1000 strokes:/ mm 7	
1250	69,5 - 71,5 (68,5 - 72,5)	500 ·	800 500	71,0 - 74,0 max. 69,5	100 250	11,9 - 12,9 7 mm RW	

Checking values in brackets

14

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrüstung. & 1980 by Robert Bosch GmbH, Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH

VDT-WPP 001/4 Edition 5.10.66

En

PES 6 A 90 C 420 LS 2138

EP/RSV 300-1000 A8 B 204 DR

supersedes

9.6.64

company

Case

Test with case overflow valve!

erigine

A 451 DT

Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

mm (from BDC)

Rotational speed	travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ³ /100 strokes 3	100 strokes	mm 2	cm³/100 strokes 3	6
1000	9	7,4 - 7,9	0,4			
	6 15	2,9 - 3,7 16,0 -17,3	s			
200	6	1,1 - 2,0				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	Control rod Control rod travel travel		Intermediate rated speed			Control- lever		rated speed Control rod travel	9	rque control Control rod travel
of control lever	mm 2	mm rev/min 3	4	5	6	deflection in degrees 7	rev/min 8	mm 9	rev/min 10	mm 11
ca.42	1015 1040	9,2 7,2	without auxiliar			ca.23 y	300 150	5,5 19 - 21	980 800	0 0,3 - 0,5
2 a	1070 1050 1100 1200	4,8 5,8 - 7,9 2,5 - 3,7 0 - 1	with	spring			300 400 500	5,2-5,8 1,5-3,2 0 - 1	600 350	0,7 - 0,9 0,9 - 1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	II-load stop	6 Rotational- speed limitat 3a Fuel delivery characteristics			Starting f	Starting fuel delivery 5 4a Idle stop				
Test oil te rev/min 1	cm ³ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm\\$1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm		
980	80,0 - 83,0	1000-1015	800 700	84,7 - 87,7 86,0 - 89,0	100	7,9-8,9				

Checking values in brackets

* 1 mm less control rod travel than col 2

VDT-WPP 001/4 Edition 23.6.64

PE 6 P 90 C 310 RS 2125 S 2228

EP/RSV 250-1100 A1 B173/1

supersedes

company engine

Lancia 516 000

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

End of pump delivery 4,4+0,1

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm³/i00 strokes	100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1000	9	5,9 - 6,5	0,5			
	6 12	2,0 - 3,0 9,5 -10,5				
200	9	3,0 - 4,0				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

1 Uppe	r rated speed		Intermediate rated speed			4	Lower	rated speed			
Degree of deflection					Control- lever		Control rod travel		Control rod travel		
of control lever	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm	
1	2	3	4	5	6	7	8	9	10	11	
ca.60	1100	16,0				ca.25	250	6			
	1150 1200	11,0 4,0		without auxilia spring			100 250	19 - 21 5,7-6,3	·		
2 a		6,4-10,3 2,8-6,6 0 - 1	with auxiliary spring				300 450	4 - 5			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	Speed limital Characteristics				Starting fuel delivery 5 4a Idle stop			
İ	cm ² /1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm	
1100	131,5 - 134.5	1120							
is	full-load deli adjusted on the								
wit	ine in accordar h the engine pection sheet.	lce							

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

VDT-WPP 001/4 Edition 12.6.72

Εn

PES 6 A 95 D 410 RS 2108

RQ 250/1100 AB 818 DL

supersedes

company: engine:

UWMF - Ungarn (MAN)

D 2156 HM 6 (170 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.7 + 0.1

mm (from BDC)

Rotational speed rev/min 1		Control rod travel * mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
		9	7,5 - 8,0	0,4			
	1000	6	3,2 - 4,2				
	200	6	0,5 - 1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	g of slider eck	Full-load speed regulation Setting point Test specifications (4)			cifications (4)							
rev/min	Control rod travel mm 2	rev/min	Control rod travel mm	Control red travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	1	Control rod travel mm 10	rev/min 11	Control rod travel mm 12	
n 114	15,5-16,1 reakaway 0-1155=1,5 ss than lumn 1 - 2!		15,8	1100 1120 1150 1200 1240	14,0-14,4 13,8-14,3 7,0-12,4 0 - 6,0 0		0	150 250 350 470	6,7-8,1 5,1-7,2 2,4-4,7 0		15,2-15,5 14,5-14,8	

Torque-control travel on flyweight assembly dimension a =

0,55_{mm}

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor co Test oil tem		Control rod stop 3a	Fuel delivery characteristics			Starting for	d Control
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5		rev/min 6	red travel cm ³ /1000 strokesy mm 7
1100	88,0 - 90,0	C, col 6-7	700 500	94,5-97,5 max. 94,5		100 250	mind.18 mm RW 6,0 mm RW

Checking values in brackets

BOSCI

VDT-WPP 001/4 Edition 13.5.70

PES 6 A 95 C 410 RS 2108Y

RQV 200-700/1100 AB767

supersedes

company. engine

MAN D 2156 HM

All test specifications are valid for Bosch Fuel injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at pastroke

1,7 + 0,1

mm (from BDC)

. O. C. O. O. C. P. 15						
Rotational জ্বনতথ rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	8,4 - 9,0	0,5			
200	6 15 9	4,0 - 5,0 16,6 -17,8 5,9 - 6,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
	deflection	rev/min Control	Control rod travel	, aenection		Control rod travei	Degree of deflection of control		Control rod travel		1
		rod travel mm	mm rev/min (28	of control lever	rev/min	mm 4	lever	rev/min	mm 3	rev/min	mm
3	1	2	3	4	5	6	7	8	9	10	11
	ca.66	1100 1150 1200 1280	14,0-16,5 8,2-12,8 1,4- 8,0 0	ca.52	700 850 1000 1150	0,4-0,8	1	100 200 300 500	7,0-8,0 5,2-7,4 1,8-4,2 0		
							(3a)				

Torque control travel a =

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil te		limitation intermediate speed	(30)		Starting Idle switchir	<u> </u>	Torque-control 5 travel Control ro travel	
rev/min	cm³/1000 strokes	rev/min 4a)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	
1	2	3	4	5	6	7	8	9
1100	110,5- 112,5		800	108,5-112,5	200	RW 6 mm		

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

VDT-WPP 001/4 Edition 18.1.65

En

B 442 D

PE 6 A 80 C 321 RS 2113

EP/RSV 200-1250 A1 B420D

supersed∈s

engine

B421D,B 440 D company

Saviem 130 N

Values_apply_to fuel-injection test tubing

RS 2103

1 680 750 015
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	travel 0		Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	2	3	4	mm 2	3	6 mm
1000	9	5,5 - 6,0	0,4			
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree deflect of con lever	e of	rated speed Control rod travel mm	rev/min Control rod travel mm rev/min		iate rated	speed	Control- lever deflection in degrees 7	rev/min .	rated speed Control rod travel mm 9	rev/min	rque control Control rod travel mm
ca.	. 70	1250 1300	16 11,2		out au	xilia	ca.25	200	6 19 - 21		0,4-0,6
(2a)		1340 1310 1340 1380 1500	5,6 8 - 10,6 4 - 7,2 1,2- 3,8 0 - 1	spring with auxiliary spring			200 350 550	5,7-6,3 2,5-4,2 0 - 1	1	1,0-1,2 1,0-1,2	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational-		iel delivery naracteristics	Starting t	fuel delivery 5	4a Idle stop		
Test oil to rev/min 1	cm ⁹ /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm\$1000 strokes	rev/min	cm 1000 strokes	rev/min 8	Control root travel mm 9	
1230	65,0-67,0	1260-1280	700 500 1250	70,0-73,0 67,5-70,5 mind.65,0		18,7-19,3 mm RW	200 13,5	(ca.6	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50: D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

MWM

WPP 00./4

En

PE 8 A 90 C 410/3 RS 2102

EP/RSV 300-1050 A 2 B 418

supersedes

company

engine

AKD 412 AV

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,45 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/miri	mm 2	cm³/100 strokes	cm³/ 100 strokes	mm 2	cm ⁹ /100 strokes	mm 6
•	9	5,9 - 6,5	0,4			
1000	6 15	2,3 - 3,1 14,5 - 15,5				
200	9	3,8 - 4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1	r rated speed Control rod travet mm		Intermed	liate rated	speed 6	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3)	que control Control rod travel mm
ca.45	1050 1100 1150 1150 1200 1350	16 12 8,2 6 - 9 2,8-5,6 0 - 1	spri	auxil		ca.20	300 100 300 400 450 550	6 19 - 21 5,7-6,3 2,4-4 0,5-3 0 -1	1000 500 350	0 0 1,2 - 1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp 40°C (104°F)	Rotational- speed limitat	Gal Fuel delivery characteristics		Starting f	uel delivery 5	da Idle stop Control rod	
rev/min	cm³/1000 strokes	changed to) rev/min 3	rev/min	cm\$1000 strokes 5	rev/min	cm 1000 strokes	rev/min 8	travel mm 9 ·
1030	57,0 - 59,0	1060-1080						

Checking values in brackets

* 1 mm less control rod travel than col 2

KDA 13.11.63

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VDT-WPP 001/4 Edition 6.11.69

En

PES 2 A 70 C 320 RS 2100 PES 3 A 70 C 320 RS 2101

EP/RSV 375-900 A4 B417D

supersed∈s

company

Kirlozkar

engine

2 R 3 R

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	crn3/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
	12	6,5 - 7,0	0,4			
1000	6 18	1,1 - 1,9 10,9 -11,9.				
200	6	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2	rev/min Control rod travel mm rev/min 3	Interme 4	Intermediate rated speed		Control- lever deflection in degrees 7	Lower rated speed Control rod travel rev/min mm 8 9		11 9 1	rque control Control rod travel mm 11
ca.50	900 930 950 940 1000 1100	16,0 11,2 7,2 8,0-10,6 2,0-3,8 0 - 1	spri	auxil		ca.25 ry	375 100 375 480 600	6,0 19 - 21 5,7-6,3 2,0-3,9 0 - 1	880 750 500	0 0,2-0,4 0,6-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp_40°C (104°F)	Rotational- speed limitat	(3a) Fu	iel delivery aracteristics	Starting f	uel delivery 5	I Control rod	
rev/min	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm 1000 strokes 5	rev/min 6	cm¶1000 strokes 7	rev/min 8	travel mm
880	40,5 - 42,5	910	800 650 450	39,5 - 42,5 43,0 - 46,0 41,5 - 44,5	100	13,7-14,3	375	6,0

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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WPP 001/4

En

PES 6 A 80 C 310 LS 2097

EP/RSV 250-1000 A 1 B 173/1

supersedes

company

Lancia ESADELTA

engine

401 - 070

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

End of pump delivery 4,6+0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁴ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5		,]
	15	9,1 -10,3				
200	9	0,9 - 1,9				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed Control rod		Intermed	liate rated	speed	4 Control-		rated speed Control rod	(3)	rque control Control rod
Degree of deflection of control	travel mm	travel mm rev/min				lever deflection	rev/min	travel mm	rev/min	travel mm
lever 1	2	3	4	5	6	in degrees 7	8	g	10	11
ca.52	1000	16				ca.22	250	6		}
	1050	10	2	out au	ıxilia	ry	100	19 - 21		Í
	1080	5,8	spri	ng			200	8,4-10,2		
1	1060	7 - 10	with	auxi1	lianu		250	5,7-6,3		
		2,3-4,8	spri		lary		300	3,5-4,8		
28	1050	0,5- 1,9 0,3- 1	Jpi i	9			350 420	0,7-3,3	<u> </u>	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	Rotational speed limitat		el delivery aracteristics	Starting fi	uel delivery 5		stop
Test oil te	cm ⁹ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ¹ /1000 strokes 5	rev/min	cm\$1000 strokes	1	Control rod travel mm
ca.	10 mm RW							

Checking values in brackets

* 1 mm less control rod travel than col 2

②

Test Specifications Fuel Injection Pumps 2 and Governors

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VDT-WPP 001/4 Edition 23.10.64

En

PES 4 A 80 C 410 RS 2094

RQ 250/1500 AA 382 D

supersedes

company:

Daimler-Benz

engine

OM 314

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.15 + 0.1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,0 - 4,4	0,3			
	6 15	0,8 - 1,7 10,1 -11,3				
200	9	2,7 - 3,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che rev/min	ck Control rod travel		int Control	Test spec Control rod travel		Idle spee Setting p rev/min 7	Control red travel	Test spe	cifications (5) Control rod travel mm 10	rev/min	Control rod (3) travel mm
600	15,6-16,0	600	15,8	1500 1520 1540 1580 1610	12,8-13,1 7,0-13,1 0,5-10,0 0 - 4,0		0	100 200 300 400 430	7,1-8,1 5,6-7,8 3,0-5,4 0 -1,5	800 1100	15,8-16,2 15,2-15,6 14,4-14,8 13,1-13,5 13,1

Torque-control travel on flyweight assembly dimension a =

mm

0,9

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c Test oil tem		Control rod stop 3a	Fuel delive	ery characteristics (3b)	Starting for	Control
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /~1000 strokes 5	rev/min 6	cm ³ /1000 strokes; mm 7
1480	57,0 - 59,0	500	1200 1000 500	58,5 - 61,5 58,0 - 61,0 56,0 - 59,0	-	-

Checking values in brackets

J14

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. ← 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1 Printed in the Federal Republic of Germany Imprime en République/Fédérale d'Allemagne par Robert Bosch GmbH.

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VDT-WPP 001/4 Edition 16.2.65

En

PES 4 A 80 C 420 LS 2093

EP/RSV 200-1000 A 1 B 46

supersedes

company

engine

Bukh A/S

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
1000	9	5,5 - 6,0	0,3			
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel rnm 2		4	diate rated	6	Control- lever deflection in degrees 7	rev/min 8	rated speed Control rod travel mm 9	1 3 /	rque control Control rod travel mm
ca.55	1000 1050 1090	16 11,4 5,8	with spri	out au	ıxilia	ca.24 ry	100	6 19 - 21	980 400 250	0 0 1,2-1,8
28	1050 1100 1150 1200	10,0-12,4 3,0- 6,4 0 - 2,5 0 - 1,0	With	auxil ng	iary		200 300 350 400	5,7-6,3 1,7-3,8 0 -2,3 0 -1,0		

The numbers denote the sequence of the tests

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Test of	,	I-load stop mp=40°C (104°F)	Rotational-speed limital Note Speed limital Note		el delivery aracteristics	Starting fuel delivery 5			e stop Control rod
rev/m	nın	cm³/1000 strokes 2	changed (o) rev/min 3	rev/min 4	cm∳1000 strokes 5	rev/min 6	cm 1000 strokes	rev/min 8	travel mm 9
90	6	57,5 - 59,5	1010-1020	-	- ,	-	-	-	-
							•		

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

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WPP 001/4

Ξn

PES 4 A 80 C 420 LS 2093

EP/RSV 200-900 A 1 B 197 D EP/RSV B 46 (B)

supersedes

BUKH

company BUKH A/S
enumber Kalundborg
4 K 105

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travei	Fuel delivery	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,5 - 6,0	0,4	2	3	
	6 15	2,2 - 3,0 11,6 -12,8	1			
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm 2	rev/min Control rod travel mm rev/min 3	Interme	ediate rate	ed speed	Control- tever deflection in degrees 7	rev/min 8	Control rod travel mm	(3)	rque control Control rod travel mm
ca.43	900 920 950	16 13 7	wit spr		auxilia	ca.16 ry	200 100 200	6 19 - 21 5,7-6,3	880 800	0 0,2-0,4 0,5-0,7 0,7-0,9
2 a	950 1000 1100	4,8-8,6 1,2-3,3 0 -1,0	wit spr		iliary		300 400 500	3,2-4,8 0 - 3 0 - 1		0,9-1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(20)	ill-load stop	6 Rotational- speed limitat		el delivery aracteristics	Starting f	uel delivery 5	(4a) Idi	e stop ¡Control rod
Test oil to rev/min	cm ³ /1000 strokes,	Note, changed to) rev/min 3	rev/min	cm\$1000 strokes	rev/min 6	cm¶1000 strokes 7	rev/min 8	travel mm
880	57,5-39,5	910-920	700 500	61,0-64,0 62,7 - 65,7	100	21 mm RW		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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VDT-WPP 001/4 Edition 5.10.66

En

PES 4 A 80 B 420 LS 401

EP/RSV 300-950 A2 A 94 D

supersedes

19.2.60

PES 4 A 80 C 420 LS 2054

EP/RSV 300-950 A2 A 137 D

company engine

Case 730/1900 731 c

Test with case overflow valve!

Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	cm ³ / 100 strokes 4	mm 2	cm 3 /100 strokes 3	mm 6
1000	9	5,5 - 6,0	0,4			
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm 9	(3)	rque control Control rod travel mm
ca.45	970 1050 1130	16,0 11,3 5,6	withous spring	out au ng	xiliaı	ca.24 y	300 100	6,5 19 - 21	650	0,3-0,6 0,8-1,1
(2a)	1100 1150 1300	6,2-9,0 3,0-5,3 0 - 1	with sprin	auxil ng	iary		300 400 560	6,2-6,8 2,8-4,3 0 - 1	400	0,9-1,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

W	ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting t	Starting fuel delivery 5 4a Idle stop		
Test oil te rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min	rev/min	cm\\$1000 strokes	rev/min	cm 1000 strokes	rev/min 8	Control root travel mm
930	67,5-69,5	950-965	650 500	74,5 - 77,5 73,0 - 77,0	100	7,5-8,6		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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VDT-WPP 001/4 Edition 10.11.67

En

PES 6 A 80 C 420 LS 2054

EP/RSV 300-925A 2 B185 DR

supersedes

company

Case

Test with case overflow valve!

engine

A 34007

Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (togque-control valve)
rev/min	mm (2)	cm3/100 strokes	100 strokes	mm	cm³/100 strokes	mm
1	2	3	4	2	3	6
1000	9	5,5 - 6,0	0,4			
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe	r rated speed	rev/min	Interme	diate rated	speed	4	Lower	rated speed	(3)	rque control
deflection	Control rod travel	travel				Control- lever deflection	rev/min	Control rod travel mm	rev/min	Control rod travel mm
of control lever	mm 2	mm rev/min 3	4	5	6	in degrees 7	8	9 .	10	11
ca.43	940	9,4	ما بدائد .			ca.26	300	5,5	905	n
	980 1010	7,0 5,0	spri	out au ng	IX II Id	ry	150	19 - 21 5,2-5,8	700	0,5-0,7
22	970 1050 1130	7,0-8,0 2,2-3,6 0 - 1		with auxiliary spring			300 400 540	2,0-4,6 0 - 1	400	0,8-1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

الالحا	all-load stop emp_40°C (104°F)	Rotational- speed limitat	3 Fu	iel delivery aracteristics	Starting f	Cont		
rev/min	cm³/1000 strokes	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm 1000 strokes	rev/min B	travel mm 9
905	64 - 66	925-940	650 500	69,0 - 72,0 67,0 - 70,0	100	7,7 - 8,6		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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VDT-WPP 001/4

Edition 23.11.64

PES 6 A 80 C 420 LS 2054 EP/RSV

EP/RSV 300-900 A 2 B 216 DR

supersedes

company

Case

Test with case overflow valve!
Pay attention to special governor setting!

engine A 401 DU

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travei mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	9	5,5 - 6,0	0,4	W 72 V	367 387 48 43 10	
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control	rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermed	tiate rated	speed	Control- lever deflection in degrees		rated speed Control rod travel mm	1137	rque control Control rod travel mm
lever 1	2	3	4	5	6	7	8	9	10	11
ca.41°	915	10,0				ca.24	300	5,5	880	0
	950 990	7,8 5,0	with spri	out au ng	xilia	ГУ	100 300	19 - 21 5,2-5,8	800	0,3-0,5
(2a)	960 1020 1100	6,8-7,6 2,4-3,9 0 - 1	with spri	auxil ng	iary		400 550	1,8-3,2	600 400	1,1-1,3 1,2-1,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp_40°C (104°F)	Rotational- speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	4a) Idi	e stop
rev/min	cm ³ /1000 strokes	changed to) rev/min 3	rev/min	cm 1000 strokes	rev/min	cm¶1000 strokes 7	_	travel mm 9
880	70,0-72,0	900-915	650 500	78,5-81,5 77,5-81,5	100	7,7-8,7		

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

VDT-WPP 001/4 Edition 14,3,68

PES 6 A 85 C 420 LS 2054

EP/RSV 300-1000 A 2 B 240 DR

supersedes

16.5.66

company engine

Case A 451 D

Test with case overflow valve! Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

mm (from BDC)

Rotational speed	travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm3/100 strokes	100 strokes	mm.	cm ⁹ /100 strokes	mm
1	2	3	4	2	3	6
1000	9	6,5 - 7,0	0,4			
	6 15	2,3 - 3,1 14,0 - 14,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm 2	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control lever deflection in degrees 7	Lower : rev/min 8	rated speed Control rod travel mm 9	(3) For rev/min 10	rque control Control rod travel mm
ca.41	1015 1040 1060	9,2 7,2 5,6	with spri	out aux	kiliar	ca.22 y	300 100	5,5 19 - 21	980 800	0,4-0,6
2 a	1030 1070 1120 1160	7,6-8,4 4,2-5,3 1,1-2,6 0,3-1.0		with auxiliary spring			300 400 500	5,2-5,8 1,2-3,2 0 - 1	700 400	0,5-0,7 0,5 - 0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40 C (104 F)	Rotational- speed limitat	iel delivery aracteristics	cs Idle			e stop (Control rod	
rev/min	cm ³ /1000 strokes 2	changed to 1 rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min	cm¶1000 strokes 7	rev/min 8	travel mm
980	75,0-77,0	1000-1015	800 600 1090	79,5-82,5 78,0-82,0 8,5-18,5	100	8,0-8,9		

Checking values in brackets

* 1 mm less control rod travel than col. 2

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VDT-WPP 001/4 Edition 16.5.66

En

PES 4 A 85 C 420 LS 2054

EP/RSV 300-1000 A 2 B 210 DR

supersedes

8.10.63

company engine Case A 301 DF

Test with case overflow valve! Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	9	6,5 - 7,0		70° V. AP 75°	0.5 CO 12 C	
	6 15	2,3 - 3,1 14,0 -14,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

14 7 7	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1 3 /	rque control Control rod travel mm
ca.44	1015 1040 1060	9,2 7,2 5,6	with spri	out au ng	xiliar	ca.24	300 100 300	5,5 19 - 21 5,2-5,8	980 800 700	0 0,4-0,8 0,5-0,8
29	1030 1020 1160	7,6-8,4 1,1-2,6 0,3-1,0	with spri	auxil ng	iary		400 520	1,2-3,2	400	0,5-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		iel delivery jaracteristics	Starting f	uel delivery (5)	4a) idi	4a Idle stop	
Test oil to rev/min 1	emp 40°C (104 F) cm3/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm [‡] /1000 strokes	rev/min 6	cm¶1000 strokes 7	rev/min 8	travel mm	
980	73,0 - 75,0	1000-1015	800 600	78,5-81,5 78,0-82,0	100	7,9-8,9			

Checking values in brackets

* 1 mm less control rod travel than col 2

40

VDT-WPP 001/4

En

PES 6 A 85 C 420 LS 1054

EP/RSV 300-1000 A 2 B 191 DR

supersedes

company engine

Case A 451 D

Test with case overflow valve!

Pay attention to special governor setting!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm ³ / 100 strokes 4	mm 2	cm ⁹ /100 strokes 3 .	mm 6
1000	9	6,5 - 7,0		j	a a grape s	
	6 15	2,3 - 3,1 14,0 - 14,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

14 1 1	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	rev/min	que control Control rod travel mm
ca.41	1015 1040 1060	9,2 7,2 5,6	with spri	iout al	uxilia	ca.22 ry	300 100 300	5,5 19 - 21 5,2-5,8	1	0 0,4-0,6 0,5-0,7
28	1030 1120 1160	7,6-8,4 1,1-2,6 0,3-1	with spr	auxi ing	liary		400 500	1,2-3,2	400	0,5-0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	Rotational- speed limitat				Starting fuel delivery (5) (4a) idle stop idle			
Test oil to rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min	cm\$1000 strokes 7	rev/min 8	Control rod travel mm	
980	73,0 - 75,0	1000-1015	1080 800 600	8,5 - 18,5 78,5 - 81,5 78,0 - 82,0	100	8,0 - 9,1			

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

40

WPP 001/4

En

PES 4 A 85 C 420 LS 2054

EP/RSV 300-1000 A 2 B 134 D

supersedes

company engine J.I. Case A-301 DF

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference cm³/	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	2	cm³/100 strokes 3	100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	9	6,5 - 7,0				
	6 15	2,3 - 3,1 14,0 -14,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

1 Uppe	r rated speed	rev/min	Intermed	liate rated	speed	4	Lower	rated speed	(3) 10	rque control
Degree of	Control rod travel	Control rod travel				Control		Control rorl travel		Control rod travel
of control	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
lever 1	2	3	4	5	6	7	8	9	10	11
ca.44	1015	9,5	ud +h	out ou		ca.24	300	5,5	980	0
	1050 1080	7,0 4,8	spri	out au ng	IX II IA	У	100	19 - 21	700	0,6 - 0,8
	1050 1150	6,5-7,4 0,6-2,1		auxil	iary		300 400	5,2-5,8 1,8-3,3	600	0,7 - 0,9
23	1200	0,3-1	spri	ng 			500	U - 1	400	0,9 - 1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	Speed in			iel delivery paracteristics	Starting f	uel delivery 5	4a) Idle stop	
rev/min	emp 40°C (104°F) cm\$/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm#1000 strokes	rev/min	cm\$1000 strokes	rev/min 8	Control rod travel mm
980	75,5 - 77,5	1000-1015	700 600 1090	80,5 - 84,0 79,5 - 84,0 16,5 - 24,0	100	8,4 - 9,5		

Checking values in brackets

* 1 mm less control rod travel than col. 2

KDA 8.10.63

VDT-WPP 001/4 Edition 5.10.66

En

PES 4 A 85 B 420 LS 445 PES 4 A 85 C 420 LS 2054 EP/RSV 300-450 A 5 A136D

supersedes company

engine

21.9.64 Case 830/1700

831

Test with case overflow valve!

Pay attention to special governor setting!
All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm3/100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm\$100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	6,5 - 7,0	0,4			
	6 15	2,3 - 3,1 14,0 -14,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control	r rated speed Control rod travel mm		Intermed	late rated	speed	Control- lever deflection	Lower	rated speed Control rod travel mm	1131	rque control Control rod travel mm
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11
ca.44	865	9,2	with h	ot		ca.26	300	5,5	830	0
-	880 920	8,0 5,2	spri	iout ai ing	uxilia	ry	100	19 - 21	700 600	0,2-0,5 0,4-0,7
29	880 950 1050	7,7-8,5 3,0-4,2 0 - 1	with spri	auxi ^r ing	liary		300 400 500	5,2-5,8 1,5-3,2 0 - 1	400	0,5-0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

Test oil te	speed limital Note changed to)			el delivery aracteristics cm ¹ 1000 strokes 5	Starting f Idle rev/min 6	uel delivery 5 cm \$1000 strokes	Control rod travel
830	74 - 76	850 - 865	600 450	77,0 - 80,0 75,0 - 79,0	100	8,4-9,5	

Checking values in brackets

* 1 mm less control rod travel than col. 2

VDT-WPP 001/4 **Edition 9.6.64**

En

PES 4 A 85 C 420 LS 2054

EP/RSV 300-900 A 2 B 134 DR

supersedes

company

engine

Case A 301 DH

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

See page 2!

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)		
rev/min 1	mm 2	cm³/100 strokes 3	cm3/ 100 strokes :	mm 2	cm ³ /100 strokes	mm 6		
1000	9	6,5 - 7,0	0,4					
	6 15	2,3 - 3,1 14,0 - 14,8						
200	6	1,3 - 2,2						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rate	d speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.40	915 950 980	9,4 7,0 4,7		without auxilia spring			300 150	5,5 19 - 21	880 700 500	0 0,3-0,5 0,6-0,8
2a	950 1000 1050 1100	6,5-7,4 4,1-4,3 0,3-2,0 0,3-1,0	1	with auxiliary spring			300 400 500	5,2-5,8 1,4-3,2 0 -1,0	400	0,6-0,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp 40°C (104 F)	Rotational- speed limitat		uel delivery paracteristics	Starting f	uel delivery 5	4a) Idle stop		
1	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm∳1000 strokes 7	rev/min 8	Control rod travel mm	
880	74,2 - 76,2	900 - 915	650 500	78,7-81,7 75,5-79,5	100 High 990	7,9 - 8,9 idle speed 1,4 - 2,4		·	

Checking values in brackets

* 1 mm less control rod travel than col 2

As opposed to VDT-WPP 001/4 - first supplement - the special setting is as follows:

 Governor-spring adjustment 	corresponds to	(1)
Pre-adjustment of full-load delivery and noting down of control-rod travel	roughly corresponds to	(2)
 Screw in torque-control retainer until control-rod travel is 1 mm more than that measured under 2. 	roughly corresponds to	(3)
 Final adjustment of full-load delivery by screwing back full-load stop screw 	roughly corresponds to	(2)
5. Adjustment of breakaway	corresponds to	(6)
 Testing of torque control and fuel- delivery characteristics 	roughly corresponds to	(3) (3a)
7. Idle adjustment	corresponds to	(4)
8. Testing high idle Test starting fuel delivery and adjust with contretatod stop	corresponds to	(6a)

Please consult test instructions as regards information given in parentheses.

En

WPP 001/4

PES 4 A 80 C 420 LS 2054

EP/RSV 300-850 A5B 132 d

supersedes

company engine

Case 730/1700

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ⁴ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,5 - 6,0	0,4			
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	(3)	rque control Control rod travel mm
ca .49	860 900 925 900 950 1050	10,0 7,0 5,0 6,6-7,5 3,0-4,2 0,3-1,0	spri	ing auxi	uxilia liary	ca.24 ry	300 100 300 400 520	5,8 19,0-21,0 5,5- 6,1 1,5- 3,5 0 - 1,0	400	0 0,5-0,7 0,8-1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(3)	ill-load stop	6 Rotational speed limitat		el delivery aracteristics	Starting f	uel delivery 5	4a) Idi	e stop
rev/min	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm¥1000 strokes 5	rev/min	cm\$1000 strokes 7	rev/min 8	Control rod travel mm 9
830	71,5 - 73,5	850-865	600 500 935	76,0-79,0 74,5-78,5 10,5-20,0	100	7,5-8,6		٠

Checking values in brackets

* 1 mm less control rod travel than col 2

25.3.63



VDT-WPP 001/4 Edition 5.10.66

En

PES 6 A 80 B 420 LS 445 PES 6 A 80 C 420 LS 2054

EP/RSV 300-800 A5 A 135 D supersedes 24.4.63

Case

Test with case overflow valve!

900 C engine

Pay attention to special governor setting!

931

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	9	5,5 - 6,0	0,4			
	6 15	2,2 - 3,0 11,5 -12,8				
200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	er rated speed	d rev/min	Interm	ediate ra	ted speed	(4)	Lowe	er rated speed	(3) 10	rque control
Degree of deflection of control	Control rod travel	Control rod travel mm rev/min				Control- lever deflection	rev/min	Control rod travel	rev/min	Control rod travel
lever 1	2	3	4	5	6	in degrees 7	8 .	9	10	11
ca.44	815	9,6	i+b	0.1± 2		ca.23	300	5,5	780	0
	840 870	7,5 5,1	spri		uxiliar	y	100	19 - 21	700	0,2-0,5
2		6,5-7,3 2,7-4,0 0 - 1	with spri		liary		300 400 500	5,2-5,8 1,0-3,0 0 - 1	600 400	0,6-0,9 0,8-1,1

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp 40°C (104°F)	Rotational- speed limitat		iel delivery iaracteristics	Starting f	uel delivery 5	(4a) Idi	da Idle stop		
rev/min	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm¥1000 strokes	rev/min	cm\$1000 strokes	rev/min 8	travel mm 9		
780	65,5 - 67,5	800-815	600 450	70,5 - 73,5 69,0 - 74,0	100	7,9 - 8,9				

Checking values in brackets

* 1 mm less control rod travel than col 2

40

VDT-WPP 001/4 Edition 18.3.65

Εn

PES 6 A 85 C 410 RS 2000

RQ 250/1200 AA 510 D

supersedes

company:

Kaelble ·

engine.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Tasters

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed sev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm 6
1000	9	6,5 - 7,0	0,4			
	6 15	2,3 - 3,1 14,0 -14,8				
_ 200	6	1,3 - 2,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Checking of slider PRG check Control rod travel mm 1 2 3 Full-load speed re Setting point Control red travel rev/min 3 4 1100 14-14.8 1100 14.4		rnt Control rød travel	•	rev/min	Idle spee Setting p rev/min 7	Control rod travel	Test spe	crications 5 Control rod travel mm	Control rod travel mm 11		
1100	14-14,8	1100	14,4	1200 1230 1260 1310	14,2-14,4 5,4-12,2 0 - 7,5 0		0	100 200 300 420	7,0-8,0 5,7-7,8 3,1-5,4 0	600 800	16,0-16,1 15,7-16,0 14,8-15,3 14,4-14,8	

Torque-control travel on flyweight assembly dimension a =

Testoil-ISO 411

0,5

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d governor of Test oil ten	elivery on control lever np. 40°C (104°F)	Control rod stop 3	Fuel delive	ery characteristics 3b	Starting f	uel delivery d Control
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strok es 5	rev/min	cm ³ /1000 strokes:/ mm
1180	80,0 - 82,0	500	800 500	83,0 - 86,0 82,0 - 85,0		-

Checking values in brackets

BOSCH

WPP 001/4

PES 4 A 90 B 420 RS 2010

EP/RSV 200-900 A4A 130 D

supersedes

Allis-Chalmers company

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	5,9 - 6,4	0,4			
	6 15	2,3 - 3,1 14,2 -15,5				
200	9	3,7 - 4,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	rev/min	Control rod	(1a)	Intermediate Degree of deflection	rated spe	Control rod	Lower rated Degree of deflection	speed	Control rod	Sliding s	leeve travel
of control lever	rod travel mm 2	mm rev/min 3	2a)	of control lever 4	rev/min 5	mm 4 6	of control lever 7	rev/min	mm 3 9	rev/min 10	mm 11
ca.55	1040	12 6,6 11 - 13 4,8-8,2		withou spring with au spring	ıxilia	ľ	ca.23	200 100 200 350 550	6 19 - 21 5,7-6,3 2,2-4,1 0 - 1	880 700 500 300	0 0,1-0,3 0,6-0,8 0,8-1

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed (2b) Ilmitation Intermediate speed	Fuel deliv	very characteristics 5a	Idle			control 5
rev/min	cm³/1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7_	8	9 .
ca.	10 mm RW	910 - 920						
ca.88	cm ²						:	,
L					İ			

Checking values in brackets

* 1 mm less control rod travel than col. 2

KDA 9.11.62

VDT-WPP 001/4 Edition 18.2.69

PES 3 A 75 C 320/3 RS 1236 EP/RSV 350-1250 A 2 B 531 DR

supersedes

company engine

M W MD 325 - 3 (Dieter) (50 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,2 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm ^{\$} /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
	12	6,2 - 6,6	0,4			
1000	9 15	3,2 - 3,7 8,5 - 9,5				
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	hate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	(3) To	rque control Control rod travel mm
ca .48	1250 1300 1350 1330 1400 1540	16,0 11,7 6,8 7,4-10,2 3,0-4,8 0-1	spri	auxil		ca.20 ry	350 150 350 500 700	6,0 19 - 21 5,7-6,3 2,6-4,3 0 - 1	1250 1000 600	0 0,3-0,5 0,5-0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting t	fuel delivery 5	(4a) Idi	e stop
rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ¹ /s1000 strokes 5	rev/min	cm 1000 strokes	rev/min	Control rod travel mm
1250	53,0 - 55,0	1270	800 500	49,0 - 52,0 45,0 - 48,5			350	6,0

Checking values in brackets

* 1 mm less control rod travel than col 2

VDT-WPP 001/4 Edition 28.3.69

PES 2 A 70 C 310 RS 1233

EP/RSV 200-1250 A1B5527 L

supersedes

PES 4 A 70 C 410 RS 1234

EP/RSV 200-1250 A1B5527 L

rcompany engine

Couach DX 2

DX 4

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9+0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
	12	6,5 - 7,0				
1000	6 18	1,2 - 2,3 10,9 -11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Орре	r rated speed	d rev/min Control rod	interm	Intermediate rated speed			Lower rated speed Torque control				
Degree of deflection of control	travel	travel				Control- lever deflection	rev/min	travel	rev/min	Control rod travel mm	
lever 1	2	3	4	5	ô	in degrees 7	8	9	10	11	
ca.72	1250	16,0]			ca.27	200	6,0	F00		
	1300 1350	11,4 4,7	spr		uxilia	ry	100	19 - 21	500 370	0	
2 a	1320 1370 1460	5,2- 7 3,4- 4 0 - 1	with spr		liary		200 300 400 470	5,7-6,3 2,6-4,2 0 -1,8 0 -1,0	250	1,2 - 1,8	

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limitat	33 Fu	iel delivery naracteristics	Starting f	uel delivery 5	(4a) Idli	e stop
rev/min	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min 4	cm\1000 strokes	rev/min	cm\$1000 strokes	rev/min 8	Control rod travel mm
1000	38,5 - 40,5	1250-1280			100	64,5-74,5		

Checking values in brackets

* 1 mm less control rod travel than col 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. 0-7000 Stuttgart 1. Printed in the Federal Republic of German, imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

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VDT-WPP 001/4 Edition 27.2.67

En

PES 3 A 70 C 410/3 RS 1183 PES 4 A 70 C 410/3 RS 1183 PES 6 A 70 C 410/3 RS 1197

EP /RSV 425-1500 A5 B486DL

supersedes

company engine

F 4 L 811 D F 6

KHD

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel			Control rod travel mm	Fuel delivery cm ⁹ /100 strokes	Spring pre-tensioning (torque-control valve) mm 6
1000	9	3,9 - 4,4	0,3			
	6 12	1,5 - 2,7 5,9 - 6,9				
200	6	0,3 - 1,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

					speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	1 3	rque control Control rod travel mm
ca.72		16,0 11,2 5,6 6,0 - 9,0 2,6 - 5,0 0 - 1	spri	auxil		ca.26 ry	425 200 425 550 760	6,0 19 - 21 5,7-6,3 2,9-4,4 0 - 1	1480 1100 800 600	0 - 0,3 1,3-1,5 1,4-1,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ili-load stop	6 Rotational- speed limitat		iel delivery iaracteristics	Starting f	uel delivery 5	(4a) idi	e stop
	cm³/1000 strokes	Note. changed to) rev/min 3	rev/min cm 1000 strokes		rev/min	cm\$1000 strokes	rev/min 8	Control rod travel mm
1500	43,0 - 45,0	1520						
								-

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung.

4. 1930 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Federale d'Allemagne par Robert Bosch GmbH.

VDT-WPP 001/4 Edition 30.9.66

PES 3 A 70 C 310 RS 1180

EP/M 60 A 158 DL

supersedes

company

Lamborgini

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm.4/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 5	Fuel delivery cm ³ /100 strokes 6	Spring pre-tensioning (torque-control valve) mm 7
1000	12	6,5 - 7,0	0,4			
	6 18	1,2 - 2,3 10,0 -11,9				
200	6	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in (

B. Governor Settings

	Leakage		Control-rod travel limitation breakaway*				Auxiliary spring auxiliary cam**		Torque control	
Torque control travel				Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel
mm	mm water col	s	mmwc	mm	mmwc	mm	mmwc	mm	mmwc	mm
[1	2	3	4	5	6	7	8	9	10	11
= rotational sp adjust breakay	500-480 /el test (cols 4-eed 500 rev/mir vay (cols 4-5) Int (B 8-9 - C 7-	11) 1 Dy means			-	-	600* 630 680 750	8,0-8,1 5,6-7,6 1,5-5,3 0 -2,6	100 200 250 325 450	9,2-9,4 9,2-9,4 8,7-9,2 8,1-8,5 8,1

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load stop screw Test oil temp 40°C (104°F)				Fuel delivery characteristics					Control road travel from full-load to Idle
n wat col	cm ³ /1000) strokes		rev/min	Vacuum mm wat col	cm ³ /1000 strokes	rev/min	Vacuum mm wat col	mm cm ³ /1000 strokes 8
580	33,0	- 35	,0	_	-	-			
						er column by i	nserti	ng	
1 n	cuum n wat col	cuum m wat col cm³/1000 3 580 33,0	cuum m wat col cm³/1000 strokes 3 580 33,0 - 35	40°C (104°F) cuum m wat col cm³/1000 strokes 3 580 33,0 - 35,0 t breakaway between	cuum cm³/1000 strokes rev/min 4 580 33,0 - 35,0 - t breakaway between 600-62	Cuum mwat col cm³/1000 strokes rev/min mm wat col 5 580 33,0 - 35,0	Cuum Cuum Cm³/1000 strokes rev/min Mm wat col Cm³/1000 strokes 5	cuum mat coi cm $^3/1000$ strokes rev/min $\frac{Vacuum}{mm}$ wat coi $\frac{cm^3/1000}{3}$ strokes rev/min $\frac{Vacuum}{mm}$ wat coi $\frac{cm^3/1000}{5}$ strokes $\frac{rev/min}{7}$ 7	cuum mwat col cm³/1000 strokes rev/min mm wat col cm³/1000 strokes col c

Checking values in brackets

BOSCH

Geschaftsbereich KH. Kundendienst Kfz-Ausrustung.

1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

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VDT-WPP 001/4 Edition 4.2.69

En

PES 2 A 85 C 310 RS 1065 PES 2 A 85 C 310 RS 1178 EP/RSV 250-900 A1 B164L

supersedes

company engine 14.2.67 Motori VM VM 25 DA VM 30 DA

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,7 + 0,05

mm (trom BDC)

RW 21

**

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm3/ 100 strokes 4	mm 2	cm³/100 strokes.	mm 6
	9	5,8 - 6,3	0,4			
1000	6 12	2.3 - 3,5 9,5 -10,5				
200	9	3,4 - 4,4				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

250 - 900

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	1 2 /	rque control Control rod travel mm 11
ca.50	900 960 1000	16,0 10,8 5,4	with sprin	out aux ng	kiliar	ca.24 y	250 100 250	6 19 - 21	880 400	0 0
(2a)	980 1050 1150	5,6-9,6 0,9-3,2 0 - 1	with sprin	auxil ng	iary		350 350 450	5,7-6,3 1,0-3,4 0 - 1	300	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

W	ili road stop	6 Rotational- speed limitat		nel delivery naracteristics	Starting fuel delivery 5			e stop
rev/min	emp 40°C (104°F) cm ³ /1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm¥1000 strokes 5	rev/min	cm¶1000 strokes 7	rev/min 8	Control rod travel mm 9 .
880	80,5-82,5	910			100	12,5-15,5		
**	Port closing d 1.5-2° camshaf	ifference b	etween	control-rod tr	avel 1	0. 5mm and 2	1 =	

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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VDT-WPP 001/4 Edition 3.74

En

PES 4 A 70 C 410 RS 1177 Z

EP/RSV 250-1500 A 2 B 490 L

supersedes

17.10.69

company

21.11.69

engine

Arona C 490

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm ³ / 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
	12	5,5 - 6,0	0,3			
1000	9	3,0 - 3,8				
200	9	1,8 - 2,6				
•						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection	r rated speed Control rod travel	Control rod travel	Interme	Intermediate rated speed			Lower	rated speed Control rod travel mm	1 (3)	rque control Control rod travel mm
of control lever 1	2	3	4	5	6	deflection in degrees 7	8	9	10	11
ca.58	1500 1560	16 10,6	with	out au	ıvilia	ry ^{ca.18}	250	6	1480	0
	1610	6	spri	ing	12 11 10	, y	100	19 - 21	500 310	0 1,2-1,8
23	1600 1650 1700 1800	5,4-8,8 2,2-4,8 0 -2,7		with auxiliary spring			250 300 400 550	5,7-6,3 4,7-5,3 1,2-3,2 0 - 1	310	1,2-1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	II-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting f	uel delivery 5	4a idle stop	
Test oil te rev/min	emp 40°C (104°F)	Note changed to) rev/min	rev/min	cm¥1000 strokes	rev/min	cm \$1000 strokes	rev/min	Control rod travel mm
1	2	13	4	5	6	<u> </u>	8	9
1480	30,0-32,0	1530-1540*						
			1					
			1			ļ		
							ļ	
			1					İ

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

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VDT-WPP 001/4 Edition 5.71

п

PES 3 A 70 C 410 RS 1177 EP/RSV 250-100A 1 B 12 L

PES 2 A 70 C 310 RS 1176

EP/RSV 250-100A 1 B 12 L

supersedcs 1.71

Lamborghini
FL 3, 45
FL 2, 30

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,2 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery 7 Ø cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery 8 Ø cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-coeffol valve) mm cm ³ / 1000 H
1000	12	6,5 - 7,0	.0 ,4	9	5,5 - 6,0	0,4
	6 18	1,2 - 1,9 10,9 -11,9		6 15	2,2 - 3,0 11,5 -12,8	
200	6	0,7 - 1,5		6	1,3 - 2,2	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rud travel mm 9	1 9 /	rque control Control rod travel mm
ca.55	1000 1060 1100	16,0 10,5 5,7 3,5-7,8	sprin	without auxiliar spring			250 100 250 300	6,0 19 - 21 5,7-6,3 3,7-4,8	980 400 300	0 0 1,2 - 1,8
2 a	1150	0,5-3,2 0,3-1,0	with sprir	auxil ng	iary		450	0 -1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

2b Full-load stop Test oil temp 40°C (104°F)		Rotational- speed limitat	Note. characteristics			Starting fuel delivery 5 4a Idle stop		
rev/min 1	cm ³ /1000 strukes 2	changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min	cm¶1000 strokes 7	rev/min 8	travel mm 9 ·
7 Ø 1000 8 Ø 1000	ca. 44 ca. 58,5	1030				·		

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d Allemagne par Robert Bosch GmbH.

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VDT-WPP 001/4 Edition 10.68

En

PES 3 A 70 C 320 RS 1160

EP/RSV 450-1400 A 2 B 451 DR

supersedes 12.65

company

Indenor/Peugeot

engine

KDP 88 (Compressor)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed	Control rod Fuel delivery		Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes	mm	cm ⁹ /100 strokes	mm
1000	12	5,3 - 5,6	0,3	2	3	6
	9 18	2,6 - 3,3 8,9 - 9,7				
200	9	2,0 - 2,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Interme	diate rated	speed	4	Lower	rated speed	(3) To	rque control
Degree of deflection	Control rod travel	Control rod travel				Control- lever		Control rod travel		Control rod travel
of control	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.65	1400	12,0		without auxilia			450	5,5	1380 1140	0
	1450 1500	9,4 6,4					300 450	19,0-21,0 5,2- 5,8	1000	0,4-0,6 0,8-1,1
	1450	8,7-9,9	with	auxil	liarv		550	3,4-4,4	550	0,8-1,1
2a	1500 1600 1700	5,1-7,3 1,1-3,3 0,3-1.0	spri				650 800	0,8- 2,9 0 - 1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ull-load stop	6 Rotational- speed limitat	1361	el delivery aracterístics	Starting t	uel delivery 5	(4a) Idle	e stop
	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to 3 rev/min 3	rev/min	cm\1000 strokes	rev/min	cm 1000 strokes	rev/min 8	Control rod travel mm
1380	32,5-34,5	1410-1430+	900 500	25,0-28,0 21,5-24,5	100	ie	450 ntrol er 29°)	7,5-11, RW 7,4)
+At n	= 1450 control	rod must h	ive mo	ved out of full	load	position b	y 1.0-	2.0 mm

Checking values in brackets

* 1 mm less control rod travel than col 2

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VDT-WPP 001/4 Edition 10.6.65

En

PES 6 A 75 C 320/3 RS 1150

EP/RSV 300-1300 A2 B 398 DR

supersedes

RS 1149

EP/RSV 300-900 A7 B 407 DR

company engine MWM

AKD 110,5 B AKD 110,5 V

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes	mm 6
1000	9	3,2 - 3,7	0,3			
	6	0,9 - 1,7]			
	15	8,5 - 9,5				
200	9	1,9 - 2,8				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed		Intermediate rated speed		4	Lower	rated speed	3 Torque control		
Degree of deflection	Control rod travel	Control rod " travel				Control- lever		Control rod travel		Control rod travel
of control	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.49	1300	16				ca.18	300	6		
	1350 1400	11,7 6,7	witho sprin	ut aux g	kiliar	у "	100 300	19 - 21 5,7-6,3		
20	1380 1480 1600	7,4-9,8 1,8-4,1 0 - 1	with sprin	auxil [.] g	iary		500 700	1,5-3,6		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

S	ill-load stop	6 Rotational- speed limitat		iel delivery iaracteristics	Starting f	uel delivery 5	(4a) ldi	e stop Control rod travel mm 9
Test oil te rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm ¹ /1000 strokes 5	rev/min	cm \$1000 strokes	rev/min 8	travel
1280	55,5-57,5	1310-1330						
						Y		./.

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

40

VDT-WPP 001/4 Edition 15.2.72

En

PES 4 A 90 C 320 RS 1145 80 EP/RSV 200-700 A4 B22DR 200-725

(1) supersedes(2) company

18.5.67 I H C

engine

TD 14 (1) D 264 (2)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15+0,1

mm (from BDC)

Rotational speed rev/min t	Control rod travel mm 2	Fuel delivery 9 Ø cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery 8 Ø cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
	15	13,6 - 14,3	0,5	9	4,1 - 4,5	
1000	6	2,3 - 3,1		6 15	1,2 - 2,0 10,3 -11,4	
200	9	3,2 - 4,1		9	3,9 - 4,4	

Adjust the fuel belivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control red travel mm	d rev/min Control roŵ travel mm?rev/min				Control lever deflection in degrees	Lower	rated speed Control rod travel mm	1(5)	rque control Control rod travel mm
1	2	3	4	5	6	7	В	la I	10	11
ca.44	700	16,0				ca.22	200	6,0	600	
	750 775	10,0 6,0	with spr		uxilja	ГУ	125	19 - 21	680	1 2 1 4
	750	9,0-11,8	1	5	7	,	{ 200 } 350	5,7-6,3 2,3-4,6	450	1,2 - 1,4
29	800 900	2,5- 4,6 0 - 1	spr	n auxi ing	ilary		450 530	0 -2,5	300	1,7 - 1,9

The numbers genote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ill-load stop	Rotational- speed limitat		uel delivery naracteristics	Starting Idle	fuel delivery 5	(4a) Idi	e stop
rest oil to	emp 40°C (104°F) cm²/1000 strokes 2	Note changed to) rev/min 3	rev/min	cm#1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm
ca.	10 mm RW	720						
725 (ca.	24,5-27,5 RW 9,8)	730	225	20,5-24,5 (ca. RW 7,6)				

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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VDT-WPP 001/4 Edition 17.3.66

En

PES 2 A 60 C 110 RS 1144

EP/RSV 400-1250 A 2 B 435 DL

supersedes

company

John-Deere-Lanz

engine

204

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

RW 9 RW 21

Rotational speed	Control rod travei	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm³/100 strokes	cm ³ / 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
	12	4,5 - 5,0	0,3			
1000	6 9	0,6 - 1,2 2,4 - 3,2		ar a si an ann		
200	6	0,3 - 0,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Uppe Degree of deflection of control fever	r rated speed Control rod travel mm 2	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rud travel mm	1(0)	rque control Control rod travel mm 11
ca.48	1250 1300 1350	16 12 7	with spri	out au ng	xilia	ca.21 ry	400 150	6 19 - 21	1230	
29	1300 1400 1550	11,2-12,6 2,8- 4,8 0 - 1		auxil ng	iary		400 550 750	5,7-6,3 2,2-4,0 0 - 1	900	0,4 - 0,6 0,8 - 1,0 0,8 - 1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	all-load stop emp 40°C (104°F)	6 Rotational- speed limitat		iel deli./erv naracteristics	Starting t	fuel delivery 5	(4a) Idi	e stop
rev/min	cm³/1000 stokes	Note changed to) rev/min 3	rev/min 4	cm\$1000 strokes	rev/min	cm 1000 strokes	rev/min	Control rod travel mm
1230	45,0 - 47,0	1270	900 500	47,5 - 50,5 47,0 - 50,0	1320	4,6-5,6 mm RW	400	6

Checking values in brackets

* 1 mm less control rod travel than col 2

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VDT-WPP 001/4 · Edition 17.4.64

En

PES 2 A 60 C 110 RS 1114

EP/RSV 400-1250 A 2 B 419

supersede s

company engine

John-Deere-Lanz LKA 53 - 18 P tractor T1C

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control red travel mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre,tensioning (torque control valve) mm 6
1000	12	4,5 - 5,0				
	6 18	0,5 - 1,2 8,3 - 9,1				
200	6	0,3 - 0,9				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

1 1	r rated speed Control rod travel mm	Control rod travel mm rev/min	Intermed	hate rated	speed 6	Control- lever dellection in degrees 7			rque control Control rod travel mm	
ca.46	1250 1280 1340	16 13,2 6,4	without auxilia spring with auxiliary spring			ca.20 ry	400 150 400	6 19 - 21 5,7-6,3	1230 600	0
29	1400	3,7 - 7 1,4 -3,4 0,3 -1,0					500 600	1,5-3,5 0 - 1	450	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

II-load stop	Rotational-speed limitat			Starting I	luel delivery 5	4a Idle stop	
cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm\\$1000 strokes	rev/min	cm#1000 strokes	rev/min 8	Control rod travel mm
33,0-35,0	1260-1270	o					
	emp 40°C (104°F) cm 3 /1000 strokes 2	cm9/1000 strokes 2 Note changed to) rev/min 3	mp 40°C (104°F) cm3/1000 strokes 2 33,0-35,0 1260-1270	mp 40°C (104°F) cm³/1000 strokes 2 Note changed to) rev/min rev/min cm³/1000 strokes 3 1260-1270	remp 40°C (104°F) Cm3/1000 strokes 2 Note changed to) rev/min cm3/1000 strokes 3 4 5 1260-1270	mp 40°C (104°F) cm3/1000 strokes 2 Note changed to) rev/min cm3/1000 strokes 3 1260-1270 Note characteristics rev/min cm3/1000 strokes 6 7	mp 40°C (104°F) cm³/1000 strokes 2 3 1260-1270 Note changed to) rev/min cm³/1000 strokes fev/min 6 7 1260-1270

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

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Edition 2.71

Test Specifications Fuel Injection Pumps and Governors

En

PES 4 A 50 D 410 RS 1127

EP/MZ 60 A 171 DL

supersedes

company

Cispalsa

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings:

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ¹ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 5	Fuel delivery cm 1/100 strokes 6	Spring pre-tensioning (torque-control valve) mm 7
	12	1,9 - 2,3	0,3			
1000	9	0,7 - 1,2				
200	9	0,4 - 1,0				

Adjust the fuel delivery from each outlet according to the values in (

B. Governor Settings

	Leakage Control-rod travel limitation breakaway*		Control	rod travel test	Auxiliary auxiliary		Torque control			
Torque control travel				Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel
l lmm	mm water col	s	mmwc	mm	mm w c	mm	mm w c	mm	mmwc	mm
۱,	2	3	4	5	6	7	8	9	10	11
0,6 <u>+</u> 0,1	500-480	10	-	-	-	-	680 820 900	12,6* 6,6-9,0 3,6-6,7	200 450 550	13,2 12,9-13,2 12,6-12,9
control rod trav = rotational sp adjust breakav cam adjustme	eed 500 rev/mi	n by mean								

C. Settings for Fuel Injection Pump with Fitted Governor

	stop screw mp 40°C (104°	F)	Fuel delivery characteristics				o)** alance)	Control road travel from full-load to
rev/min	Vacuum mm wat col 2	cm³/1000 strokes	rev/min 4	Vacuum mm wat col 5	cm ¹ /1000 strokes 6	rev/min	Vacuum mm wat col	mm cm³/1000 strokes 8
1700	680	28,2 - 29,2	250 di	spersion	6,2 - 8,2 ₎ max. 1,5	0	0	6,0-6,5
		way between der the gover	700 nor sp		r column by i	nsertin	g	

Checking values in brackets

BOSCH

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VDT-WPP 001/4 Edition 22.1.65

PE 12 A 75 C 520 RS 1126

EP/RSV 300-900 A7B427

supersedus

company

KHD

engine

A 12 L 714

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9+0,1

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm3/100 strokes	100 strokes	mm	cm ⁹ /100 strokes	mm
1	2	3	4	2	3	6
1000	12	6,7 - 7,2				5
	9 15	3,8 - 4,3 9,0 -10,2				
250	9	2,5 - 3,4				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermediate rated speed Control-lever deflection in degrees 7 Lower rated speed Control rev/min mm Control rev/min mm 9		Control rod travel mm	1 3 1	rque control Control rod travel mm			
ca.60	900 940 970 960	16 11 6,4 6 - 9,6				ca.27 y	300 100 300	6 19 - 21 5,7-6,3	880 450	0
28	1000	2 - 4 0,3- 1	with spri	auxil ng	iary		360 460	2,7-4,2	340	1,2 - 1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(A)	ill-load stop	6 Rotational- speed limitat	(3a) Fu	el delivery aracteristics	Starting fuel delivery 5 4a idle stop			
Test oil to rev/min	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm¶1000 strakes 7		Control rod travel mm 9
880	72,5 - 74,5	910 - 920		0			300	6

Checking values in brackets

* 1 mm less control rod travel than col 2

estoil-ISC

VDT-WPP 001/4 DAI 5,6 c Edition 3.64

PES 6 A 80 B 410 RS 2014 RQ 300/1425 A 405 D supersedes 10.62

company Daimler-Benz OM 322

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,5 - 5,0	0,3			
	6 15	1,2 - 2,0 10,4 -11,8				
200	6	0,4 - 1,2				,

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin	g of slider	Full-load s	speed re	gulation		idle spec	ed regula	ition		Torque o	ontrol
PRG che	nck 1	Setting po	int	Test spec	cifications (4)	Setting p	oint	Test spe	cifications (5)		(3)
rev/min	Control rod travel mm 2	rev/min	Control rod travel mm	Control rod travel mm 5	rev/min	rev/min	Control rod travel rnrn 8	rev/min 9	Control rod travel mm	rev/min	travel
1400	14-14,8	1400	14,4	1425 1450 1500 1550 1660	14-14,4 11,6-14,4 6 -11,5 0 - 8	1	0	150 200 300 400 450	7-8,1 6,2-8,1 3,8- 6 0 -2,2	650 800	15,7-16,4 15,3-15,8 14,8-15,3 14,4-14,6

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop 3a	Fuel delivi	ery characteristics 3b	Starting fi idle spee	uel delivery d Control
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /~1000 strokes 5	rev/min	rod travel cm³/1000 strokes: ∤ mm 7
1000	53,5 - 55,5	*A454D additional intermediate- speed stop	500 700 1400	53,0 - 57,0 53,5 - 56,5 57,5 - 61,5	100 350	mind. 7,9 2,9 - 3,4

Checking values in brackets



VDT-WPP 001/4 VOB 5,0a

2. Edition

PES 6 A 90 $_{
m D}^{
m C}$ 320 RS 2319, Y, V

RQV 200-1250 AB 743 R 300-1250 supersedes 1.75

Values apply to fuel-injection test tubing 1 680 750 015

company Volvo - BM Engine TD 50 B

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

+++

Port closing at prestroke

2,0+0,1 -RW 9

mm (from BDC)

Rotational speed rev/min	Control rod travel mm	cm ³ /		travel	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,4 - 6,8	0,4			2,5±0,1 ** (max. 2,2-2,9)
	6 9	0,3 - 0,9 2,6 - 3,5				(IIIQX • 2 , 2 - 2 , 3)
** In the ca	9 se of gr	0,8 - 1,7 eater dispersio	n alter t	he delive	ry-valve sprin	g pre-tension

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV 200 - 1250 AB 743

Testoil-ISO 4113

deflection of control	rev/min Control rod travel mm	travel	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel	Lower rated Degree of deflection of control lever 7	speed rev/min 8	Control rod travel mm _ 3	Sliding s rev/min 10	mm
ca.68	1250 1300 1350 1430 1530	15,0-18, 11,0-15, 6,6-12, 0 - 7,	0 0 0	-	-	ca.12	250 350 450 550 670	6,6-8,0 4,3-6,5 1,8-3,4 0,8-2,1	1200	8,0
	*** Po	rt closin ,1mm cams	g differe haft.	nce b	tween cor	rel-rod	trav	el 9 mm ai	d 21	=

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil tem		Rotational-speed 2b limitation intermediate speed	Fuel deliv	ery characteristics (5a)	Starting Idle switchir	_	Torque-	Control cod
rev/r/in	cm³/10@0 strokes	rev/min 48	rev/min	v/min cm³/1000 strokes		cm ³ /1000 strokes	rev/min	mm
1	2	3	4	5	6	7	8	9
2319: 900 2319Y 900 2319V 900	52,0 - 54,0 42,0 - 44,0	1260	500		1350	I h /h_I! /h	**	

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

VDT-WPP 001/4 KAE 14,3 i Edition 1.65

Er

PE 6 B 90 E 410 S 1107, z

RQ 300/650 B 501

supersedes 12.5.60

company:

Kaelble

engine:

GN 130 s

GN..-Lok II

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

Pumps S 1341 and S 1341 z must all be set to the

delivery of the "z" version and "z" must be stamped

A. Fuel Injection Pump Settings

Port closing at prestroke

on the nameplate.

 $2,95 \pm 0,1$

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	12	11,1 - 13,2	0,5			\Box
	9 18	6,1 - 8,0 21,2 - 23,6				v. 3
200	9	5,2 - 7,1				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	g of slider eck Control rod travel mm 2	Full-load s Setting po rev/min 3	•	Test specifications (4)		Idle speed regula Setting point Control rod travel rev/min mm 7		Test specifications Control rod travel rev/min 9 10		 Control rod (3) travel mm
450	15,9-16,1	450	16	650 660 680 700 730	15,8-16 12,6-16 4,8-12 0 -7,4	450	0	250	7,2-8,1 4,8-7,1 1,4-4,1 0	

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delivery characteristics			Starting f	uel delivery d
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5			Centrol rod travel cm³/1000 strokes. € mm 7
600 600	139,0 - 142,0 127,0 - 130,0	600					

Checking values in brackets

BOSC

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 DAI 4.6a Edition 3.64

PES 6 A 70 B 410 RS 22

ROV 250 - 1400 A 25 D

supersedes company:

1.9.53

Daimler-Benz

engine

OM 312

All test apacifications are valid for Bosch Fuel Injection Pump Test Beriches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valva) mm 6
1000	12	6,5 - 7,0	0,4			
	6 18	1,2 - 1,9 11,1 -11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper :	rated s	peed			intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
Degree deflect of cont lever	ion	rev/min Control rod travel mm	Control rod travel mm rev/min	(1a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	1
66 <u>+</u> 1	1,5	1380 1420 1460 1540 1590	14,6-16 11,4-14 7,8-17 0 - 4	1,6				10 <u>+</u> 1,5	100 250 400 600 870	7,4-9,2 5,6-7,4 2,6-4,4 1,2-3	1000 900 700	0 0,1-0,4 0,6-0,9 0,8-1,0
								3a)				

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roe Test oil ten		Rotational-speed (2b) Ilmitation Intermediate speed	Fuel delivingh idle s	rery characteristics 5a peed 5b	Starting Idie switchir		Torque- travei	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	/	В	9
1000	44,5 - 46,5	1400-1420		46,5 - 49,5 45,5 - 49,5	100+ 20	7,9-9,9	1200	
			,					

Checking values in brackets

* 1 mm less control rod travel than col 2

VDT-WPP 001/4 DAI 5,1 f Edition 3.64

En

PES 6 A 80 B 410 RS 174 1062 RQV 250 - 1500 A 49 D

supersedes

1.5.61

company.

Daimler-Benz OM 321 mA

All test specifications are valid for Bosch Fuel Injection Pump Tast Banches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,15 + 0,1

mm (from BDC)

			(
rev/min mm 1 2		Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	9	4,1 - 4,5	0,3			
	6 15	1,2 - 2,0 10,3 -11,4				
200	9	2,9 - 3,7				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	eed	Lower rated	speed		Stiding sleeve travel	
deflection	rev/min Control rod travel	Control rod travei	(1a)	Degree of daffection of control		Control rod travel	Degree of deflection of control		Control rod travel	Silding s	1
	mm	rev/min	(2a)		ten/wiu	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
65 <u>+</u> 1,5	1500 1540 1620 1720 1790	15 - 18 11,4-15, 4,4-10, 0 - 4,	4				10±1,5	100 250 400 600 920	6,5-8 4 -6 2,6-3,4 1,6-3,4	1000 900 800 600 400	0 0,2-0,4 0,5-0,7 0,9-1,1 1,0-1,2
							<u>3</u> a)	,			

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

	Full-load de Control-ros Test oil terr		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	rery characteristics (5a)	Starting Idle switchin	. 0	Torque- travel	Control 5	
	rev/min 1	cm ³ /1000 strokes	rev/min 4a	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min	travel mm 9	
, , , , , , , , , , , , , , , , , , ,	1000	54,5-56,5	1510-1530	500 700 1500	,,.	100	mind.7,9	1300		

Checking values in brackets

* 1 mm less control rod travel than col 2

VDT-WPP 001/4 DAI 4,6 x Edition 3.64

<u> E</u>1

PES 6 A 70 B 410 RS 64 1034 RQV 250 - 1400 A 140 D

supersedes

15,8.58

company: engine

Daimler-Benz OM 312

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1.9 + 0.1

mm (from BDC)

		1,5 , 0,1	(110111 220)			
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,5 - 7,0	0,4			
	6 18	1,2 - 1,9 11,1 - 11,9				
200	6	0,6 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sleeve travel	
deflection	rev/min Control rod travel	(LEAG)	(1a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Silding 5	1
	mm	rev/min	(29)		rev/min	mm . 4	lever	rev/min	mm 3	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
65 <u>+</u> 1,5	1400 1440 1520 1600 1660	11,6-15 4,4-9,6 0 -4,2	5				10 <u>+</u> 1,5	150 250 400 700 950	7,4-8 5,4-7,4 3,6-4 1,7-3,4	1420 1200 800 500	0,4-0,8 0,8-1,0
	,						3a		_		

Torque control travel a =

1,0 mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ros Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel deliv	very characteristics 5a	Starting Idle switchin		Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1000	43,5-45,5	1400-1420	500 1400	44,5-47,5	100	mind. 7,9	8	9

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

WPP 001/4

En

PES 6 A 70 B 410 RS 64/7

RQ 250/1125 A 301 d

(AV 4541 d)

supersedes

company: engine Daimler-Benz

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control velve) mm 6
1000	12	6,5 - 7,0	0,4			
	6 18	1,2 - 1,9 10,9 -11,9				
200	6	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod travel	Full-load s Setting po rev/min 3			rev/min				Control rod travel mm	Torque o rev/min 11	Control rod (3)
1050	14,6-15,4	1050	15	1125 1130 1160 1200 1240	13,4-15 5 -12,2 0 - 6,2	520	0	420 400 300 200 100	0 0 - 1,3 3 - 5,3 5,4-7,7 6,8-8,1		15,7- 21 15,2-15,7 15 -15,4

Torque-control travel on flyweight assembly dimension a =

0,3 _{mm}

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Q	Full-load delivery on governor control lever Test oil temp. 40°C (104°F)			Control rod stop	Fuel delivery characteristics		3 b	Starting for	del delivery	
		cm³/-1000 strokes	-1.	rev/min 3	rev/mi	n	cm ³ /-1000 strokes 5		rev/min 6	cm ³ /1000 strokes/ mm
				:						

Checking values in brackets

KDA 14.2.63

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WPP 001/4

En

PES 4 150 B 110 RS 17/7

EP/M 60 A 44

supersedes

company

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,1. + 0.1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm '/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 5	Fuel delivery cm '/100 strokes 6	Spring pre-fensioning (torque-control valve) mm
1000	12	2,4 - 2,7	0,3		0,8	
	9 18	1,4 - 1,6 4,7 - 5,2				
200	9	0,9 - 1,4		·		

Adjust the fuel delivery from each outlet according to the values in ;

B. Governor Settings

			Control-rod travel limitation breakaway*					Auxiliary spring auxiliary cam**		ontrol
	Vacuum pressure drop			Control rod travel	Vacuum	Control rod travel		Control rod travel	Vacuum	Control rod travel
mm	mm water col	s	mmwc	mm	mmwc	mm	mm w c	mm	mm w.c	mm
1	2	3	4	5	6	7	8	9	10	11
control rod travel test (cols 4-11) = rotational speed 500 rev/min adjust breakaway (cols. 4-5) by means of shims* cam adjustment (8 8-9 - C 7-8) by means of shims**						-	+250 400 600 900	20,2-21 16 -19 5,6-7,6 0 -0,5		

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load Test oil te	Full-load stop screw Fest oil temp 40°C (104 F)			very character	istics	idle (sto idle (imb		Control road travel from full-load to	
rev/min	Vacuum mm wat col 2	cm ³ /1000 strokes	rev/min 4	Vacuum mm wat col	cm ³ /1000 strokes	rev/min	Vacuum mm wat. col	idle mm cm ³ /1000 strokes 8	
1300		24,5 - 25,5							

Checking values in brackets

2.4.58

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VDT-WPP 001/4

En

PES 6 A 70 B 410 RS 64

EP/RSV 250-1300 A1A 364 D

supersedes

company

Daimler-Benz

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm³/100 strokes	100 strokes	mm 2	cm ³ /100 strokes	mm 6
,	12	6,5 - 7,0	0,4			
1000	6 18	1,2 - 1,9 10,9 -11,9				
200	6	0,7 - 1,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	r rated speed Control rod travel mm		intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed (Control rod travel)	1 3	rque control Control rod travel mm 11
ca.72	1300 1340	16,0 11,6	with	out aux	xiliaı	ca.26	250	6	1280	0
	1380	5,8	spri			3	100	19 - 21 8,6- 21	1200	0,2-0,4
23	1360 1420 1500	6,9-10,5 1,6- 4,2 0 - 1	with sprin	auxil ng	iary		160 250 400 600	5,7-6,3 1,8-3,8 0 - 1	350	0,4-0,6 0,5-0,7

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

(1)	il-load stop	6 Rotational- speed limitat		uel delivery naracteristics	Starting idle	fuel delivery 5	4a Idle stop		
rev/min	cm ^{\$} /1000 strokes	Note changed to) rev/min 3	rev/min	cm ² /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm	
1280	51,0-53,0	1210-1230	900 500	53,5 - 55,5 46,5 - 48,5					

Checking values in brackets

* 1 mm less control rod travel than col 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch. GmbH. Postfach 50. D-7000 Stuttgart 1. Printed in the Federal Republic of Germany. Imprime en Republique Federale d'Allemagne par Robert Bosch. GmbH.

VDT-WPP 001/4 DAI 4,4 a Edition 3.64

PES 3 A 85 B 410 RS 2030

EP/RSV 250-1150 A 4 A 373

4.62 supersedes

company

Daimler-Benz

engine

MB 863

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,15+0,1

RW 9

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	100 strokes	mm 2	cm ⁹ /100 strokes	mm 6
1000	9	5,5 - 5,9	0,4			
	6 12	2,4 - 3,2 8,8 -10,0				
200	9 Port closi 2-1-3mm_cam	3.0 - 3.9 ng difference	petween cor	trol-rod t	ravel 9 mm and	21 =

Adjust the fuel delivery from each outlet according to the values in I

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	control rod travel mm rev/min			Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	1 3	rque control Control rod travel mm	
ca.71		16 10 6,2 6 - 10 3,6-6,6 0,6-2,9 0 - 1	sprin	auxil.		ca.24 ÿ	250 100 250 300 450	6 19 - 21 5,7-6,3 3,8-5,9 0 - 1	1130 450 300	0 0 1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	Rotational- speed limitat Speed limitat Reference of the speed limitate of the speed l			Starting t	uel delivery 5	4a Idi	e stop
rest oil to	cm ^{\$} /1000 strokes	Note changed to) rev/min 3	rev/min	cm ^a /1000 strokes	rev/min	cm/1000 strokes 7	rev/min	Control rod travel mm
970	77,0 - 79,0	1160-1180					250	6

Checking values in brackets

* 1 mm less control rod travel than col. 2

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. 1980 by Robert Bosch GmbH. Postfach 50. 0-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

@

Test Specifications
Fuel Injection Pumps 2
and Governors

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VDT-WPP 001/4 DAI 4,6a7 Edition 3.64

En

PES 6 A 70 B 410 RS 122

RQ 250/1450 A 200 D

supersedes

1.8.59
Daimler-Benz

company engine

OM 312

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,9 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	6,5 - 7,0	0,3			
200	6 18 6	1,2 - 1,9 11,1 -11,9 0,6 - 1,5			٠	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min 1	ck Control rod Itravel	Full-load s Setting po rev/min 3			_	Idle spee Setting p rev/min 7	Control rod travel	Test spe	cifications (5) Control rod travel mm 10	rev/min	Control rod (3) travel mm 12
1350	13,6-149,4	1350	14	1450 1470 1500 1560	13,4-14 8 - 14 0 - 9 0	520		200 250 300 370 420	5,6-7,6 4,4-6,6 3 - 5 0 -2,5 0	600 800	15,8-17,8 15,4-15,8 14,9-15,2 14,1-14,5

Torque-control travel on flyweight assembly dimension a =

,6

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor c	elivery on ontrol lever np. 40°C (104°F)	Control rod stop	Fuel delivery characteristics			Starting for	uel delivery d Control
rev/min	cm ³ /-1000 strokes	rev/min	rev/min	cm ³ /-1000 strokes		rev/min 6	cm ³ /1000 strokes:/ mm
1000	34,0 - 36,0	500	500 700 1430	34,0 - 37,0 34,5 - 37,5 34,5 - 37,5		100	mind. 7,9

Checking values in brackets

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrustung. © 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch GmbH.

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VDT-WPP 001/4 Edition 4.74

Εn

PES 4 A 75 C 320/3 RS 1257 PES 4 A 75 $_{
m D}^{
m C}$ 320/3 RS 1267

EP/RSV 300-1175 A1 B11

supersedes 2.71 company 10.71 Hürlimann

engine DS 95

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 1,9+0,1

RW 9

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm St 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
	9	4,7 - 5,1	0,4			
1000	6 15	1,9 - 2,6 10,4 -11,5				
200	6	0,9 - 1,8				

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

estoil-ISO 4113

	r rated speed		Intermed	liate rated	speed	4		rated speed	3 Torque control		
deflection	Control rod travel	travel				Control- lever	<u>.</u>	Control rod travel		Control rod travel	
of control lever	mm	mm rev/min				deflection in degrees	rev/min	mm	rev/min	mm	
1	2	3	4	5	6	7	8	9	16	11	
ca.65	1175	16,0				ca.27	300	6,0			
	1220	11,6		out au	xiliaı	'y	100	10 01	1150	0	
	1280	3,8	spri	19			100	19 - 21	450		
	1240	7,0-10,2	with.	auxi1	inmu		300 360	5,7-6,3 2,8-4,4	450	0	
2 a	1300	1,4-3,8	sprin		iary		480	0 - 1	340	1,2-1,8	
	1380	0 - 1									

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat	33 Fu	iel delivery aracteristics	Starting f	uel delivery 5	4a) Idle stop	
rest on te rev/min	cm ^{\$} /1000 strokes	Note changed to) rev/min 3	rev/min	cm ⁹ /1000 strokes 5	rev/min	cm ³ /1000 strokes	rev/min	Control rod travel mm
1150	59,5-61,5 (58,5-62,5	1185-1195*	500	53,0-56,0 (52,0-57,0)	100	7,9-8,9 (→ 1267)	
** 1.6+	ort closing dif 0,1mm camshaft.	ference betw	veen c	pntrol-rod trave	1 9 mr	n and 21 =		

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

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VDT-WPP 001/4 10. Edition

En

PES 4 A 95 C 420 LS 3013

EP/RSV 300-1100 A2B538DR

supersedes

(9) 31.7.73

D 420 LS3023

375-1100

company

Case

375-1100 A2B651DR 375- 875 A7B696 R

engine

A 336 BDT

Test with Case overflow valve and governor as per special setting (not for 696R!) All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,0 + 0,1

mm (from BDC)

Rotational speed	Control rod	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes 3	mm 6
1000	9	8,4 - 9,0	0,5			
	6 15	4,0 - 5,0 16,4 -17,8				
200	6	1,4 - 2,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV .. 538DR, 651 DR

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	9	rque control Control rod travel mm
ca.38	1200 1160 1190	11,2 6,0 2,6	without auxilian spring with auxiliary spring			ca.16 y	375 150	50 19 -21	1100	0
29	1140 1180 1260	10,6-11,4 4,4-6,2 0,3-1,0					375 450 540	5,6-6,2 1,4-3,4 0 - 1	450	0,3-0,6

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

E	ull-load stop	Rotational Speed limitat Speed			Starting fuel delivery 5 4a Idle stop				
Test oil to rev/min 1	cm ³ /1000 strokes	Note changed to) rev/min 3	rev/min ೭	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strakes	rev/min 8	Control rod travel mm	
1100	121,5-124,5 (120,5-125,5)	1140-1155*	750 1200	122,0-126,0 max. 125,0 11,5-19,5 (10,5-20,5)	100	13,6-14,4	375 cr	17-23 3/1000	

Checking values in brackets

* 1 mm less control rod travel than col. 2

12.74

B. Governor Settings

1	r rated speed Control rod travel mm		Interme	diate rated	speed	Control- lever deflection in degrees 7	- Lower	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm 11
ca.59	885 900 920	12,0 9,5 5,8	without auxilia spring			ca.29 ry	375 100 375	19 - 21	875 350	0 0,2-0,8
28	900 950 1000	8,5-10,0 1,5-3,8 0,3-1	wit spr	h auxi ing	liary		420 500	2,0-3,8	330	0,2 0,0

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational- speed limitat.		nel delivery paracteristics	Starting f	uel delivery 5	Idle stop	
rev/min	cm ³ /1000 strokes changed to) rev/min 3		rev/min	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
875	132,0-135,0 (131,0-136,0)	880-895	900 940	86,5-111,5 (85,5-112,5) 11,5- 21,5 (10,5- 22,5)	100	13,5-14,5	375 cm ³ /	17-23 1000

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

14 1	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	diate rated	speed 6	Control- lever deflection in degrees 7	rated speed Control rod travel mm 9	rev/min	rque control Control rod travel mm
				,	••				
20				,					

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	II-load stop	Rotational- speed limitat.	Rotational-speed limitat. Speed limitat. Speed limitat.			Starting fuel delivery 5 4a Idle stop			
1	emp, 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strakes 5	rev/min	cm ³ /1000 strokes 7	rev/min B	Control rod travel mm 9	
								·	
			<u> </u>		<u> </u>				

Chacking values in brackets

* 1 mm less control rod travel than col. 2

As opposed to VDT-WPP 001/4 - 1st supplement - pumps 2263, 2264, 2354, 2459, 2460, 2461 and 3013 feature the following special setting:

1.	Governor-spring adjustment	corresponds to (1)
2.	Pre-adjustment of full-load delivery and noting down of control-rod travel	roughly corresponds to (2	2)
3.	Reduce full-load control-rod travel as opposed to (by 1.0 mm by screwing back full-load stop screw	(2) roughly corresponds to (2	?)
4.	Screw in torque-control retainer until full-load delivery is attained	roughly corresponds to (3	J)
5.	Adjustment of breakaway	corresponds to (6))
6.	Testing of torque control and fuel-delivery characteristics	roughly corresponds to (3) (3	Ba)
7.	Idle adjustment	corresponds to (4)
8.	Testing high idle; test starting fuel delivery and adjust with control-rod stop	corresponds to (5	~ 3)

Please consult test instructions as regards information given in parentheses!

WPP 001/4 MWM 2,1 a

PES 4 A 55 B 410 RS 413

EP/RSV 250-1500

20.7.60 supersedes

S 1046

400-1500 A 2 A 45 d **

Südd. Bremsen company **AKD 10 V**

395 D

engine

** See page 2!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

1,7 + 0,1

mm (from BDC)

RW 9

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1000	9	2,1 - 2,5	0,2	2	3	6
	6	0,6 - 1,1		94 E 40 N 360		
200	9	1,7 - 2,3				
	-					

Adjust the fuel delivery from each outlet according to the values in \Box

B. Governor Settings

250 - 1500

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	Intermediate rated speed 4 5 6			Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.61	1500 1570 1630	16 10,7 5,7	witho sprin	out aux ig	xiliar	ca,21 y	250 150 250	6 19 - 21 5,7-6,3	1480 1200 1000	0 0,5-0,7 0,8-1,0 1,3-1,5
2 a	1580 1600 1700 1800	8,5-11,2 6,6- 9,7 1 - 3,6	with sprin	auxil [·] g	iary		400 500 700	3,5- 5 0,5-3,5 0 - 1	400	1,3-1,5

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

9	ull-load stop	6 Rotational- speed limitat		iel delivery aracteristics	Starting f	uel delivery 5	(4a) idi	e stop
rev/min	emp 40°C (104°F) cm³/1000 strokes 2	Note changed to) rev/min 3	rev/min 4	cm·/1000 strokes	rev/min	cm:/1000 strakes	rev/min	Control rod travel mm
1480	29,2-31,2	1510-1530	1200 600 400	27,7-30,7 29,2-32,2 28,2-31,2	100 (21m	mind.5,9 m RW)	n250 (→ A3	RW6 77d)
Por 7-	t closing diffe 9° camshaft.	rence betwee	n con	trol-rod travel	9 mm a	nd 21 =		

Checking values in brackets

* 1 mm less control rod travel than col 2

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B. Governor Settings

400-1500

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermediate rated speed			Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.61	1500 1560	16 11,6		out au	xilia	ca.24	400	6	1480 1200	0 0,6-0,8
29	1620 1600 1700 1800	6,8 6,8 -10 1 - 3,6 0 - 1	sprii with sprii	auxil	iary		100 400 600 750	19 - 21 5,7-6,3 1 -3,2 0 -1	1000 450	0,9-1,1 1,3-1,5

C. Settings for Fuel Injection Pump with Fitted Governor

2b Fu	ill-load stop	6 Rotational- speed limitat.	Rotational- speed limitat. 3a Fuel delivery characteristics			uel delivery 5	4a Idle stop		
Test oil temp. 40°C (104°F) rev/min cm³/1000 strokes		Note: changed to) rev/min	Note: changed to)		rev/min cm³/1060 strokes		Control rod travel rev/min mm		
1	2	3	4	5	6	7	8	9	

Checking values in brackets

* 1 mm less control rod travel than col. 2

Testoil-ISO 4113

B. Governor Settings

Degree of deflection of control lever 1	r rated speed Control rod travel mm 2	Intermed	Intermediate rated speed 4 5 6		Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	rque control Control rod travel mm 11
(2a)								

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting fuel delivery 5 4a Idle stop			
rev/min	mp. 40°C (104°F) cm³/1000 strokes	Note: changed to) res/min 3	rev/min	cm ³ /1000 strokes	rev/min	cm³/1090 strokes	rev/min 8	Control rod travel mm
								·

Checking values in brackets

* 1 mm less control rod travel than col. 2

40

VDT-WPP 001/4 HAN 2,1 g Edition 10.64

En

PE 3 A 65 B 410 LS 536 S 1039 Z

EP/RSV 250-1100 A1 A 118D

supersedes

company engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,1 + 0,1

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm³/ 100 strokes 4	Control fod travei mm 2	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	12	5,7 - 6,2	g			
	6 18	1,4 - 2,1 9,7 -10,6				
200	6	0,8 - 1,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	Intermediate rated speed 4 5 6			Lower rev/min 8	rated speed Control rod travel mm	(3)	rque control Control rod travel mm
ca.72	1100 1160 1220	16 12,2 7	without auxilian spring with auxiliary spring			ca.31	250 100 250	6 19 - 21	1080	0 0,5-0,7
2 a)	1200 1250 1300 1400	7,2-10,2 3,2-5,2 0,3-3,5 0-1					350 400 600	5,7-6,3 4 - 5 2,5-4,2 0 - 1	700 400	1,0-1,2 1,0-1,2

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

Est oil temp 40°C (104°F)		6 Rotational- speed limitat	(3a) Fuel delivery characteristics		Starting fuel delivery 5 4a idle stop			
	cm³/1000 strokes	Note changed to) rev/min 3	rev/min	cm ² /1000 strokes 5	rev/min	cm ¹ /1000 strokes 7	rev/min	Control rod travel rom
1080	39,0-41,0	1110-1130	900 500	41,5-44,5 41,5-44,5				

Checking values in brackets

* 1 mm less control rod travel than col 2

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